

Health Trends in Alberta:
A Working Document

Alberta

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Strategic Direction

A sound understanding of trends in health is an essential part of setting goals and priorities for health systems and for publicly funded programs that support health and well being. In turn, setting goals and priorities is critical if we are to ensure accountability and continuous improvement within health systems and beyond. Across Canada and internationally, there is a move to develop indicators for measuring and reporting health trends. Within Canada, the drive to align these efforts on a national basis is led by the Canadian Institute of Health Information (CIHI) *Information Road Map Initiative*. The Health Trends Initiative, led by the Surveillance and Environmental Health Branch of Alberta Health and Wellness, supports this national endeavour.

The Health Trends Initiative consists of seven integrated sub-projects designed to meet current and evolving health needs.

- This document, ***Health Trends in Alberta, A Working Document*** is the primary communications tool for the Health Trends Initiative. It provides technical information on a number of health and health determinant indicators.

- The ***Report on the Health of Albertans*** (2006) is a document about the health status of Albertans, and includes discussions of important health issues and strategies. This document is written to be understood by a broad public audience.

- The **Methods** initiative is developing and standardizing analytic strategies, display capacity (including graphic elements and mapping) and interpretation of the data and information that is used in this and other Alberta Health and Wellness reports.

- The **Health Priorities** subproject is developing and refining a model for identifying and prioritizing the most important population health issues in Alberta.

- The **Health Targets** subproject is exploring the feasibility of developing targets for health status measures and where appropriate will recommend targets.

- The **Health Strategies** subproject is identifying strategies that can be used to address high priority health issues.

- The **Health Research** subproject is identifying priority areas of health research to support the measurement of health status, the development of health strategies, the assessment of health strategy effectiveness, and the communication and dissemination of health status information.

This report, *Health Trends in Alberta, A Working Document,* will continue to be a health status information resource that is appropriately responsive to a variety of needs. To serve this end, the Surveillance and Environmental Health Branch at Alberta Health and Wellness has sought wide-ranging participation from internal and external stakeholders.

Objectives

The main objectives of *Health Trends in Alberta, A Working Document* are to:

- Provide an overview of selected health trends including demographics, health status, health determinants, mortality, and communicable disease incidence from an Alberta perspective within a Canadian context;
- Estimate provincial changes in these trends over time; and
- Describe the age/sex distribution and spatial variations, where appropriate, of these health issues for the province

Health Trends in Alberta, A Working Document can also be viewed as an Alberta-specific complement to two major reports prepared by the Federal, Provincial and Territorial Advisory Committee on Population Health. These reports, *Towards a Healthy Future: Second Report on the Health of Canadians* and *Statistical Report on the Health of Canadians*, present a wide range of data from a Canadian perspective, including information on many of the trends described here.

Approach

Health surveillance is "… the tracking and forecasting of any health event or health determinant through the collection of data, and its integration, analysis, and interpretation into surveillance products, and the dissemination of those surveillance products to those who need to know" (Health Canada, 1999).

Selecting health trends for monitoring is a crucial component of surveillance activity. *Health Trends in Alberta, A Working Document* includes measures which have been consistently used in the scientific and research literature, and for which Alberta Health and Wellness has national comparative data. Where possible, measures include those recommended for population health monitoring by the Canadian Institute of Health Information (CIHI) *Information Road Map Initiative.*

For each health issue selected where 'person-level' data are available, there are point-in-time comparisons between Canada, Alberta and 'best province'; trend data for Alberta (1985 to present); a distribution of the measure by age and sex; and a brief interpretation of the data presented. For measures where sufficient appropriate data are available and informative, regional comparisons are illustrated with regional and sub-regional maps.

Many of the trends that are identified here focus on mortality measures by disease category. Incidence data are provided by infectious disease categories. Health determinant trends have been derived primarily from survey sources. So far, measures of wellness are under-represented in the document.

Disease Categories and Data Sources

The Ninth and Tenth Revision of the *International Classification of Diseases* (ICD-9 and ICD-10) were used to identify diagnoses in mortality and morbidity statistics. ICD-9 codes were used for data up to 1999, and ICD-10 codes were used for data from 2000 and later. A description of ICD-9 and 10 codes by disease is provided in Appendix A. Records of non-Alberta residents were excluded from all provincial level analyses.

Data were obtained from several sources:

- Mortality and birth data were obtained from Alberta Vital Statistics for the years 1985 to 2006. Comparison data for Canada and the "best province" came from *Health Indicators '2003 and 2005* produced by Statistics Canada.

- Health status data were obtained from the *National Population Health Survey* (1994-95, 1996-97) and the Canadian Community Health Survey (2000-2001, 2002-2003, 2004-2005).

- Data for incidence measures of infectious diseases were obtained from communicable diseases databases at Alberta Health and Wellness and from the Centre for Infectious Disease Prevention and Control of the Public Health Agency of Canada.

- Data from additional sources were also used and are identified where they are employed.

Epidemiologic Measures

Age- and sex-specific rates were computed for mortality measures. Only those mortality measures where sufficient cases were available to calculate stable estimates were included in this report. To allow for a comparison over time and across health regions, age-standardized mortality rates were calculated using the direct method. The 1996 Canadian population was used as the standard set of weights. This method controls for potential sources of bias resulting from variations in age distribution of populations across provinces, regions, and over time.

The incidence measures for communicable diseases have not been age- or sex-standardized. Only total counts are available for interprovincial comparisons. For some communicable disease data, regional breakdowns are not available and in some instances not provided because there are too few cases to allow stable rate estimates.

Measures based on surveys have been weighted to reflect sampling strategies and to provide accurate population estimates. These measures have not typically been age- or sex-standardized.

Where time trends and age-sex curves are graphed, a trend line has often also been drawn. Several different smoothing techniques were employed. Since the intention was to indicate the most general features of the data, these curves should be considered descriptive.

Epidemiologic Measures for Maps

All health events reported in this document are mapped according to the method described below. It was developed to address the issue of how population sizes of health regions can affect rate stability -- specifically, rates will be less stable for regional health authorities with small populations than those for regional health authorities with larger populations. The mapping method used in this report is designed to address this issue and allow statistically consistent interpretations. (As an example, the numbers shown in the calculations in steps 1, 2 and 3 below use birth weight data for three years combined to calculate a crude rate and its standard error. It should be noted that *where sex- age standardized rates are used a more detailed calculation would be required* for these three steps.)

The mapping method consists of the following seven steps:

1. Calculate the rates for each region. For crude rates, an example of this calculation is shown below.

Health Region #	Low Birth Weight (LBW)	Total Births	Proportion LBW
1	189	3,453	0.05
2	183	3,069	0.06
.	.	.	.
.	.	.	.
.	.	.	.
9	65	1,557	0.04

2. Calculate the rate for the province. For crude rates, an example of this calculation is shown below.

   - Number of low birth weight newborns: 6,726
   - Total number of live births: 113,252
   - Proportion low birth weight: 6,726 / 113,252 = 0.059

3. Calculate standard error of a probability of a health event for each regional rate. For crude rates the formula which follows can be used.

$$\sqrt{\frac{p(1-p)}{n}}$$

Where: p is the proportion (estimate of probability) for the region
n is the number of births.

Health Region #	Low Birth Weight	Total Births	Proportion LBW	Calculation	Standard Error
1	189	3,453	0.05	$\sqrt{\frac{0.05(1-0.05)}{3,453}}$	0.0038
2	183	3,069	0.06	$\sqrt{\frac{0.06(1-0.06)}{3,069}}$	0.0037
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
9	65	1,557	0.04	$\sqrt{\frac{0.04(1-0.04)}{1,557}}$	0.0051

4. Calculate the regional-specific standard scores.

   Subtract the regional proportion from the provincial proportion and divide these by the standard score derived for each region in step 3. Repeat for each region.

$$\frac{\text{regional proportion} - \text{provincial proportion}}{\text{regional standard error}}$$

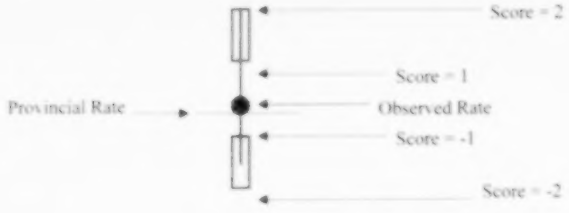
5. Graph the regional-specific standard scores calculated in Step 4.

   The following colour scheme is used to differentiate the rates that may differ from the provincial average.

Score	Interpretation	Colour
> 2	Higher than provincial average (significant difference in a conventional statistical test ($p<0.05$)	Red
1 to 2	probably higher than provincial average ($p > 0.5$ but < 0.95 that difference is not due to random variation)	Orange
1 to –1	Not likely to differ from provincial average ($p< 0.5$ that difference is not due to random variation)	Yellow
-1 to -2	Probably lower than provincial average ($p > 0.5$ but < 0.95 that difference is not due to random variation)	Light green
< -2	Lower than provincial average (significant difference in a conventional statistical test ($p<0.05$)	Dark green

The figure below illustrates how to interpret the graphic for an individual region. The yellow bars are used to show that the provincial rate crosses between the 1 and –1 score range. The table above lists other colour possibilities by score category.

The black dot represents the value of the rate for each region. The colour of the bars above and below the dot represents the score of the region. The portion of the bar closest to the black dot represents the value for a standard score of 1 or –1, while the part of the bars farthest from the dot represent the value for a score of 2 or –2.



6. Generate maps using the same categories for each region as listed in Step 5.

The graph and map are placed on the same page. The map allows the reader to obtain a quick overview while more detailed information is presented on the graph. The colour assigned to each region is based on the colour of the bars in the graph for the same region. This provides a spatial context to the distribution patterns and consistency among the two graphic elements.

7. Generate a cartogram.

A cartogram is similar to a map. However, a circle sized in proportion to the regional population represents each region. This graphic is useful for interpreting reported rates by providing an indication of the population size of each region.

Sub-Region Maps

In order to provide more detailed information at the regional level, this version of the Health Trends report has included a sub-region map where possible for some indicators. The sub-region map breaks each of the 9 regional health authorities into 68 sub-regions defined in 2004. The sub-region map compliments the regional maps by showing where differences may exist within each regional health authority.

The sub-region map is generated using similar steps as the regional map by calculating the sub-region rate, provincial rate and sub-region standard error. Differences in colour schemes between the regional and sub-regional maps may occur when differences in rates occur in sub-regions within a regional health authority. For a more detailed description on the sub-region methodology see the report: Alberta Health and Wellness (2005). *Calculating Small Area Analysis: Definition of Sub-regional Geographic Units in Alberta.*

Updating the Working Document

This working document is intended to support planning and policy initiatives in Alberta. As some of the data are valid for a point in time, updates will be provided as new data become available. Additional sections will also be added as other needs for information and sources of information are identified or become available. New measures, such as morbidity measures for chronic diseases and injuries, may also result in the addition of new graphs. Future versions of Health Trends will be available as an online searchable resource.

Updates will be placed on Alberta Health and Wellness public website: http://www.health.gov.ab.ca/. For further information about this report, please contact the Public Health Surveillance and Environmental Health Branch, Alberta Health and Wellness, by phone at (780) 427-4518, by fax at (780) 427-1470, or by the toll-free RITE line from within Alberta at 310-0000.

Further relevant information is available from many sources. Some of these, both print and electronic, are listed in the References section.

A: Demographics



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SECTION A: DEMOGRAPHICS

The majority of data used for this section come from administrative health databases of Alberta Health and Wellness.

The Alberta Health Care Insurance Plan Stakeholder Registry and the Alberta Vital Statistics database provide timely and accurate demographic data for the Alberta population. Non Alberta residents, military personnel, RCMP, inmates residing in federal penitentiaries, or people who have decided not to register with the Alberta Health Care Insurance Plan are not included in these analyses.

Statistics Canada provides demographic data on a national level.

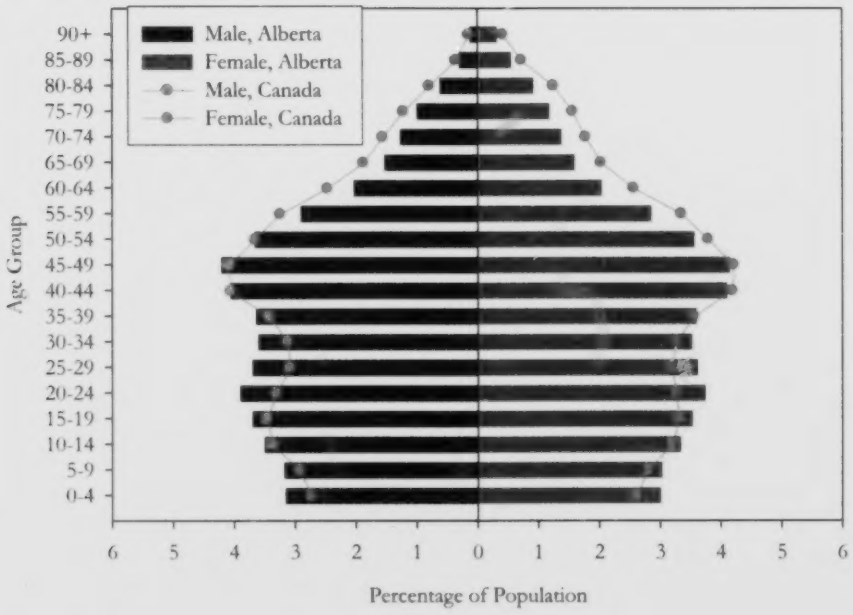
The specific data source is indicated for each graph.

Population

The Alberta Health Care Insurance Plan Stakeholder Registry File contains records for almost all individuals residing in the Province of Alberta. As a result, counts of registrants at particular points in time can function as a source for estimates of Alberta's population. (A small number of individuals, including members of the armed forces, RCMP, inmates residing in federal penitentiaries, or people who have decided not to register with the Alberta Health Care Insurance Plan are excluded from this database). There were 3,298,028 Alberta residents in this file as of June 30, 2006.

The age distribution of Alberta's population differs slightly from the age distribution of Canada's population. Since Alberta has smaller proportions of older persons, the average age of Albertans is lower than the average age of Canadians residing outside Alberta.

Figure 1: Population Distribution, Alberta and Canada, 2006



Source: Statistics Canada

The populations of Alberta's regional health authorities differ dramatically as shown in the stylized maps. Here, each geographic region has been redrawn with an area proportional to its 2006 population. A comparison of this cartogram with a standard map shows that the largest areas in Alberta have the smallest populations.

Figure 2: Population Cartogram, Alberta Health Regions, June 30, 2006

RHA	Population	Health Region
1	136,362	Chinook
2	102,387	Palliser
3	1,207,814	Calgary
4	400,240	David Thompson
5	111,107	East Central
6	1,087,333	Capital
7	177,420	Aspen
8	230,648	Peace Country
9	36,247	Northern Lights

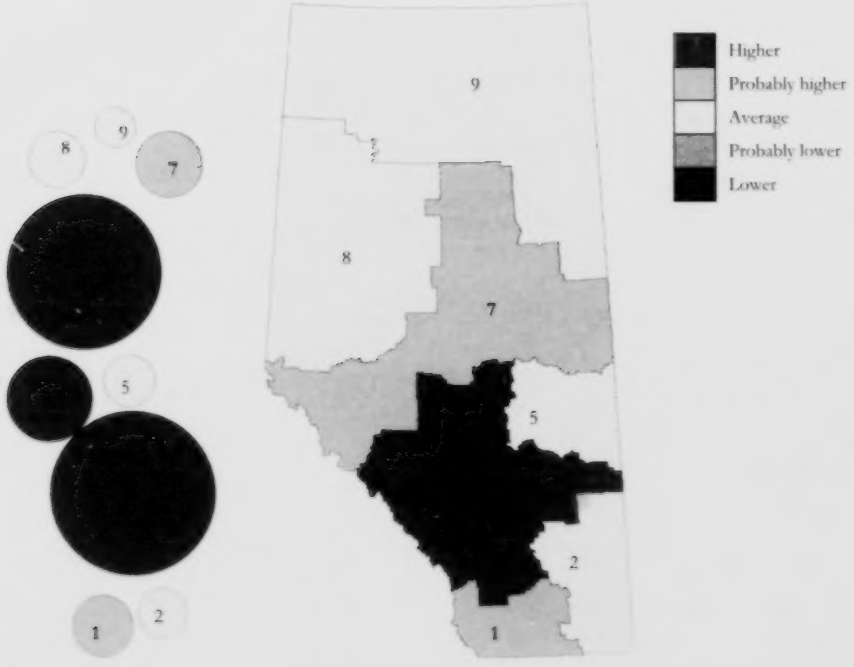


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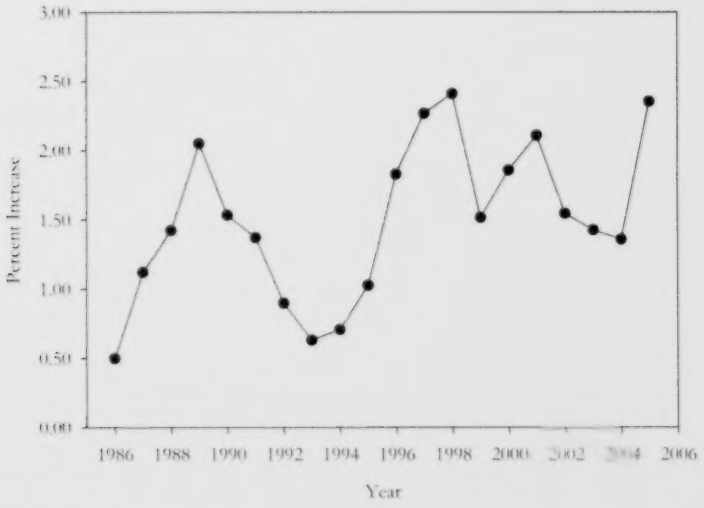
RHA	Population	Health Region
1	156,562	Chinook
2	102,387	Palliser
3	1,207,814	Calgary
4	300,246	David Thompson
5	111,197	East Central
6	1,027,553	Capital
7	177,420	Aspen
8	139,009	Peace Country
9	75,547	Northern Lights

Source: AHCIP Stakeholder Registry



Since 1986 the percent population growth has fluctuated in response to the economic growth in Alberta. Population growth has been high in Alberta since the late 1990s.

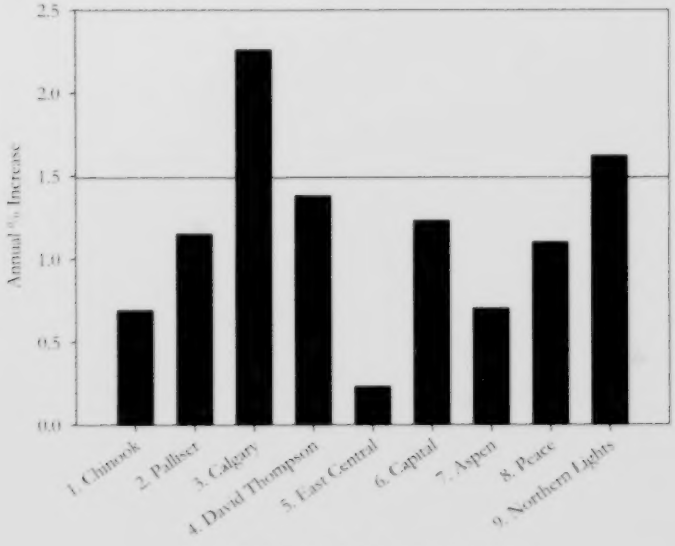
Figure 3: Percent Increase in Population in Alberta 1986/87 – 2005/06



Source: Surveillance & Environmental Health

Since 1986, the largest population growth has occurred in the Calgary and Northern Lights regions where it exceeded the provincial average of approximately 1.5 percent.

Figure 4: Population Growth: Annual Percent Increase by Health Region, 1986-2006

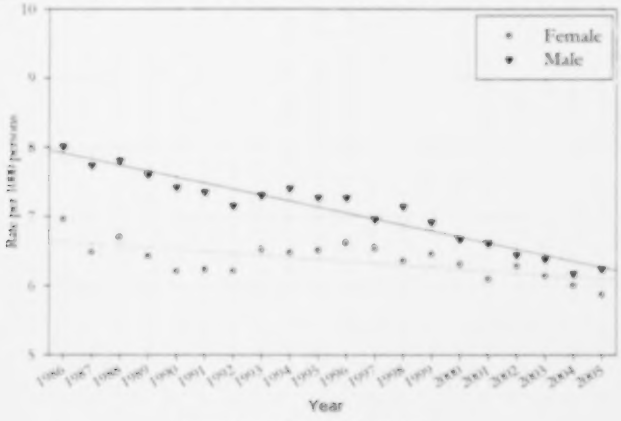


Source: Surveillance & Environmental Health

Mortality

The age standardized mortality rate is a measure of the number of individuals per 1,000 population who die in a single year (if the population distribution by age were the same for Alberta as for Canada as a whole). Mortality rates have been decreasing in Alberta over the past decade, though this is much more apparent for males than for females.

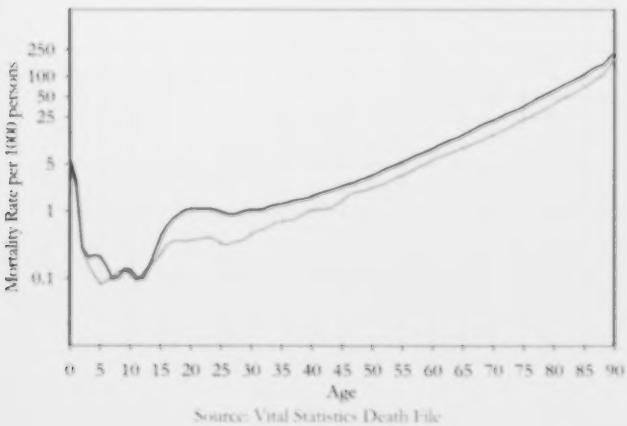
Figure 5: Age Standardized Mortality Rate, Alberta 1986-2005



Source: Vital Statistics Death File

The age-specific mortality rates show low rates in childhood, a rapid increase in the teenage years, a plateau during the young adult years, and a consistent increase thereafter with age. In Alberta, females generally have lower age-specific mortality rates across the lifespan.

Figure 6: Age Specific Mortality Rates in Alberta, 2001-2005 Combined



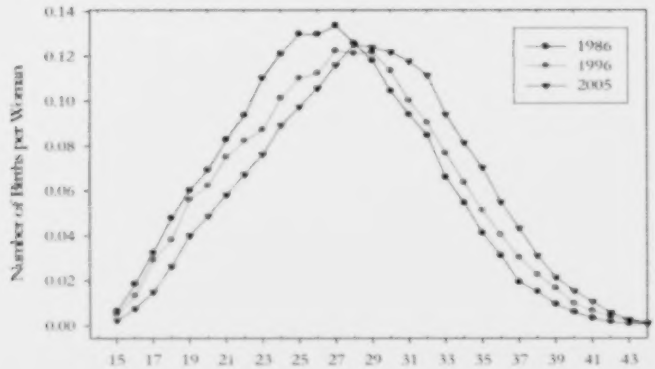
Source: Vital Statistics Death File

Mortality rates are often transformed and presented as life expectancies. Section C: Health Status and Determinants of this document presents information on life expectancy. For a detailed consideration of death rates due to specific causes, see Section D: Chronic Disease and Injury section.

Fertility

The age-specific fertility rate for a given period (usually one year) is the total number of live births to mothers in a specific age group, divided by the total female population in that age group. The curve formed by plotting age-specific fertility rates across all childbearing ages is considered a good descriptor of patterns of fertility within a population. Between 1986 and 2005, the fertility curve has shifted downwards, indicating decreased fertility, and to the right, indicating an increase in the mean age of fertility. From 1986 to 2005, the mean age of fertility increased from 27.2 to 27.9 years of age in Alberta.

Figure 7: Age-Specific Fertility Rates Alberta, 1986 - 2005



Source: Vital Statistics Birth File

The total fertility rate (TFR) is the sum of age-specific fertility rates and is interpreted as the average number of children that would be born to each female in the population if the age-specific fertility rates did not change. The total fertility rate for Alberta was already low in 1986 and under the level of 2.1 needed to maintain a stable population size. Although there have been fluctuations from year to year, the TFR decreased during the 1990s, but then began to increase almost back to the 1986 level. The TFR was 1.82 births per woman in 1986, and was 1.8 births per woman in 2005.

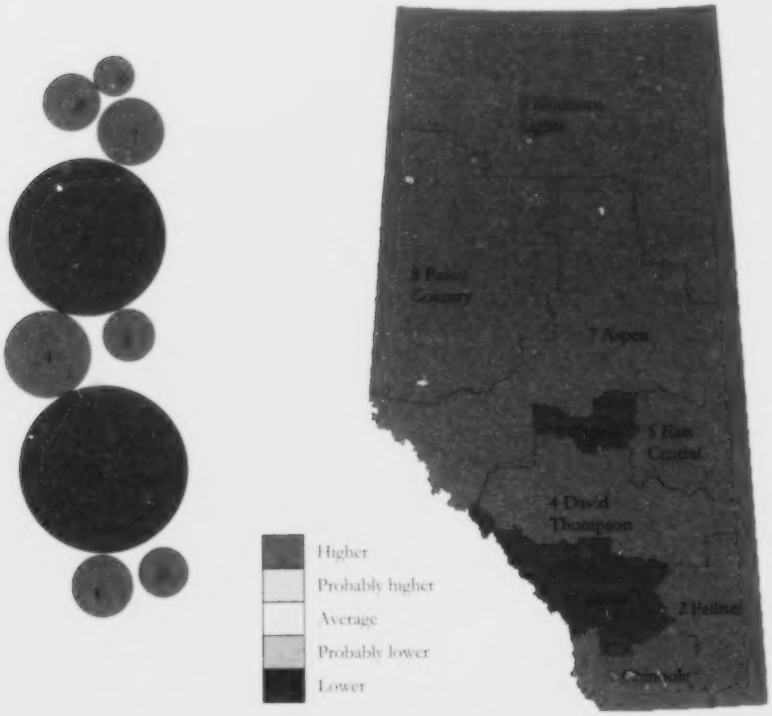
Figure 8: Total Fertility Rate from 1986 - 2005

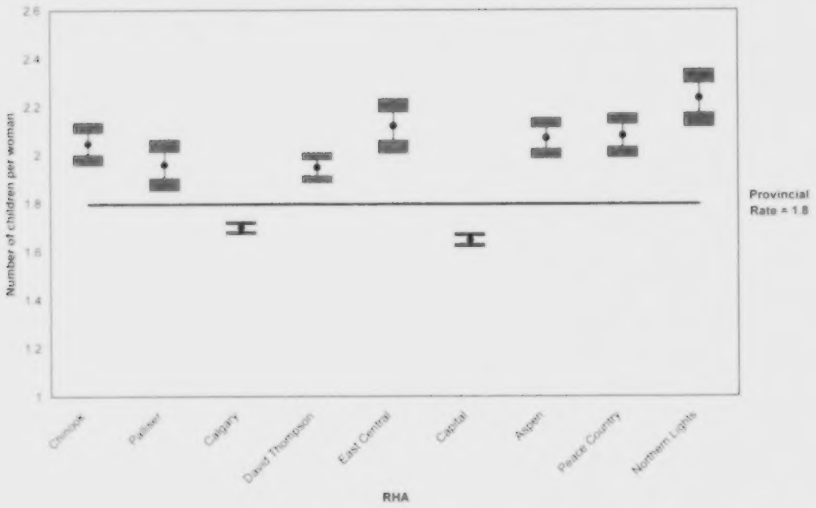


Source: Vital Statistics Birth File

There is considerable variability in the TFR by region, with higher rates generally associated with northern and rural regions.

Figure 9: Total Fertility Rate by Region, 2005



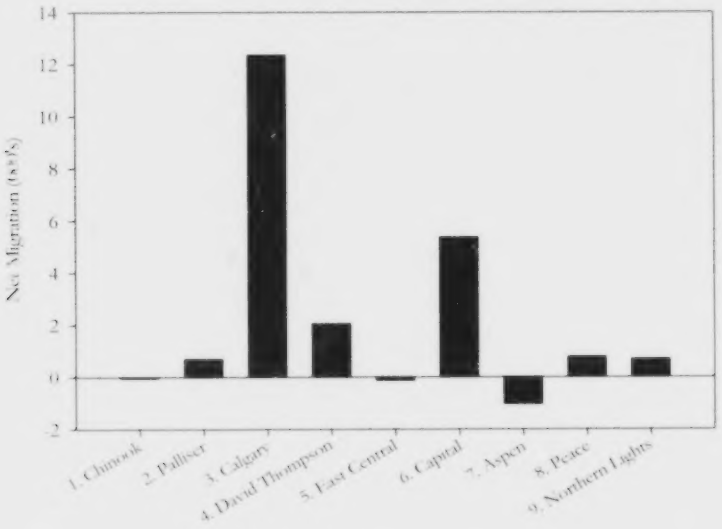


Source: Vital Statistics Birth File

Migration

Migration patterns are difficult to predict because they are often strongly influenced by short-term economic considerations. In the recent past, Alberta has shown a strong increase in net migration due to a strong economy and oil sands development. In 2004-05 all regions showed a net influx of people except Chinook, East Central, and Aspen regions which saw a small out flux. Calgary and Capital regions showed the largest net influx.

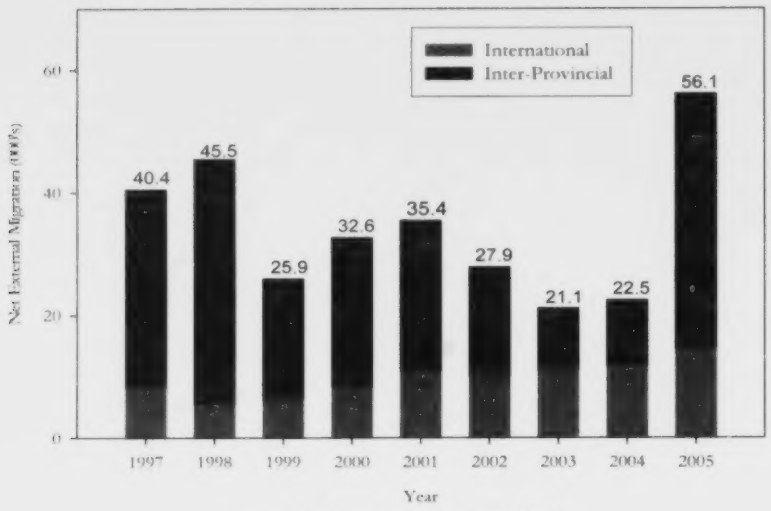
Figure 10: Net Migration in Alberta by Health Region, from July 1, 2004 to July 1, 2005



Source: Surveillance & Environmental Health

Migration can occur from other countries or from other parts of Canada. The proportion of migrants to Alberta coming from international versus inter-provincial sources has fluctuated over the years. In most recent years, net inter-provincial migration has been significantly greater than the net international migration. International migration tends to be more stable from year to year than does inter-provincial migration due to fixed immigration targets set by the Federal Government.

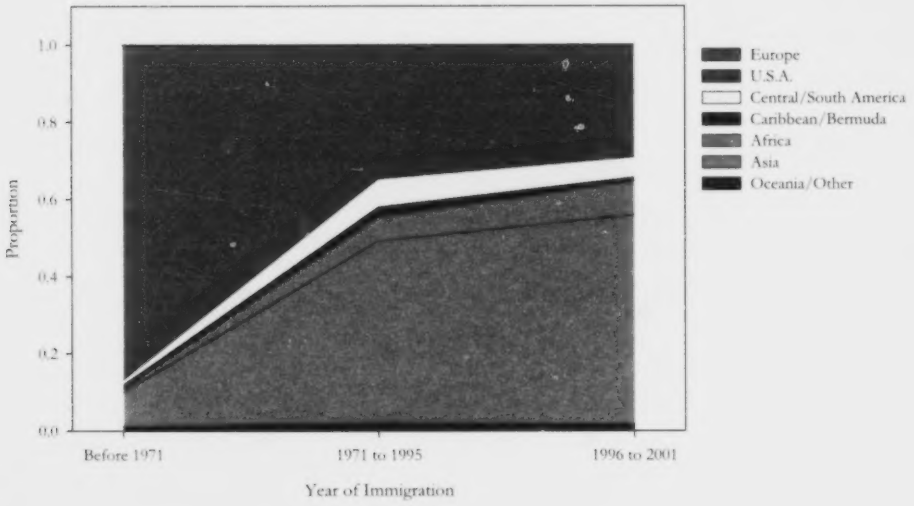
Figure 11: Net Migration in Alberta, 1997 to 2005: International vs. Inter-Provincial



Source: Surveillance & Environmental Health

The source of international immigrants coming to Alberta has changed over the years. In the 1970s, the majority of international immigrants came to Alberta from Europe. Over time this has changed as the majority of international immigrants now come to Alberta from Asia.

Figure 12: Alberta Immigrant Population in 2001, by Place of Birth and Period of Immigration



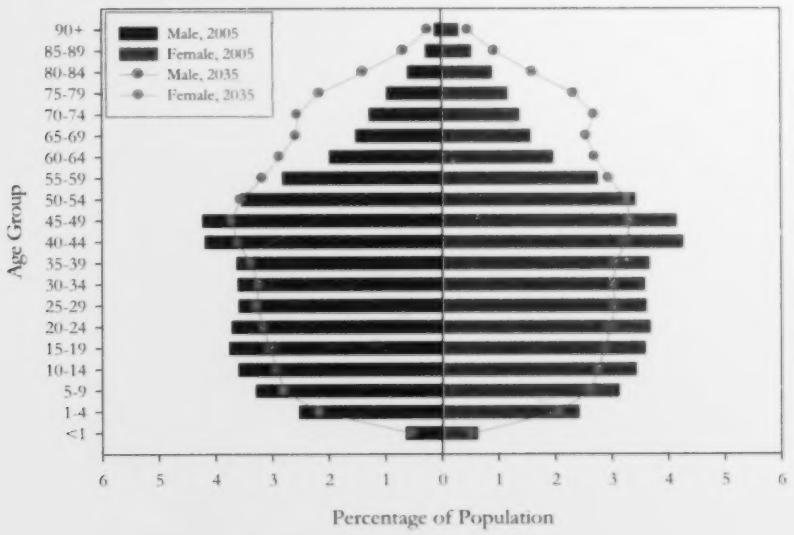
Source: Surveillance & Environmental Health

Projected Population Change

In the most widely used method for developing population projections, separate projections are developed for mortality, fertility and migration, the three major components of population growth. These components of population change are then combined to generate population projections. Alberta Health and Wellness' population projections are available in detail from a report entitled *Population Projections for Alberta and its Health Regions: 2006-2035.*

According to these projections, Alberta's population structure will change substantially over the next two decades as the 'baby boom' generation ages. There is also an indication that a second, or 'echo boom' will have reached adulthood by 2035.

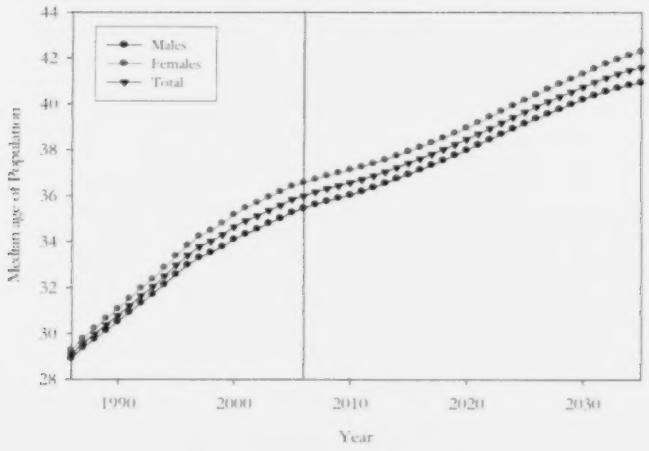
Figure 13: Population Distribution Alberta, 2005 versus 2035 (projected)



Source: Surveillance & Environmental Health

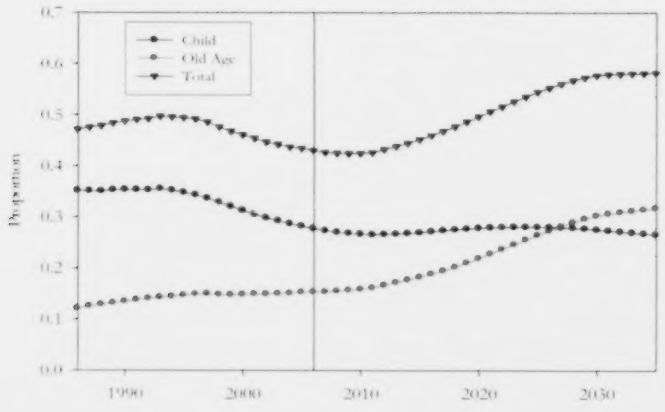
This age structure is reflected in part by a projected increase in the median age of Albertans over the next two decades. The proportion of older Albertans will increase and the proportion of younger Albertans will decrease in the next millennium. Given the aging of the population, specifically the baby boomers and projected declining fertility, the number of seniors is expected to surpass the number of children in Alberta. By 2020, over one half of the population will be "not of working age", and by 2035, only 42% will be of working age (between 15 and 64 years of age) as compared to 57% currently.

Figure 14: Median Age of Population in Alberta, 1986 to 2005 (Actual) and 2006 to 2035 (Projected)



Source: Surveillance & Environmental Health

Figure 15: Dependency Ratios in Alberta, 1986 to 2005 (Actual) and 2006 to 2035 (Projected)



Source: Surveillance & Environmental Health

B: Child and Infant Health



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SECTION B: CHILD AND INFANT HEALTH

Data used in this section come from the following sources:

National rates are obtained from the Statistics Canada's Health Indicators database, the Canadian Community Health Survey and the Longitudinal Survey of Children and Youth.

Provincial data used to report rates over time and regional variations are obtained from the Alberta Vital Statistics and Alberta Congenital Anomalies Surveillance System databases.

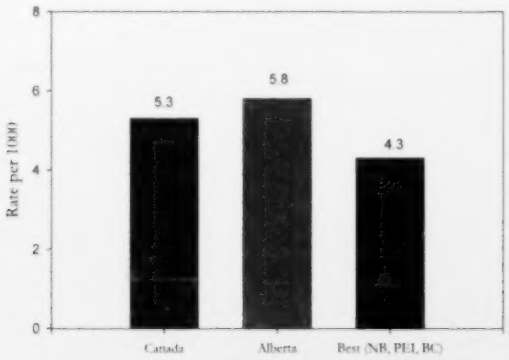
The specific data sources are indicated for each graph.

Infant Mortality

Infant mortality – death in the first year of life – is recognized internationally as an indicator of population health. The infant mortality rate is defined as the number of infants who die before their first birthday out of every 1000 live born babies, and reflects the health of infants and their mothers. Infant mortality is closely related to congenital anomalies, premature births and low birth weight. Determinants affecting the previous factors include the mother's age, use of tobacco, alcohol, or other drugs; her access to adequate prenatal care; adequacy of nutrition, living conditions and presence of acute or chronic disease.

In 2004, excluding the territories, the infant mortality rate in Alberta was the third highest in Canada at 5.8 per 1,000 live births, higher than the Canadian average of 5.3 per 1,000 live births. New Brunswick, Prince Edward Island, and British Columbia were tied for the lowest rate in Canada for infant mortality at 4.3 per 1,000 live births.

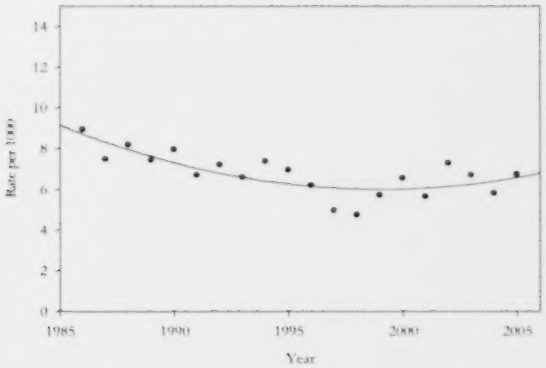
Figure 16: Infant Mortality, 2004 (Canada, Alberta, Best Province)



Source: Statistics Canada

Over the last 20 years, while the infant mortality rate has fluctuated, the trend has remained fairly stable. The graph shows a gradual decline from the late 1980s with greater fluctuations in more recent years.

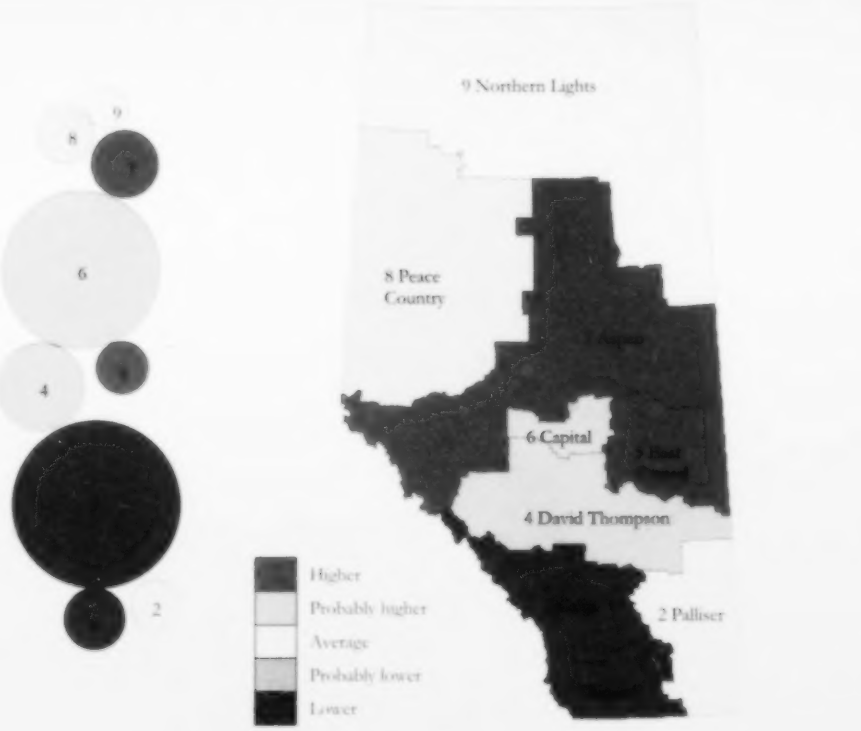
Figure 17: Trends in Infant Mortality in Alberta, 1986 - 2005

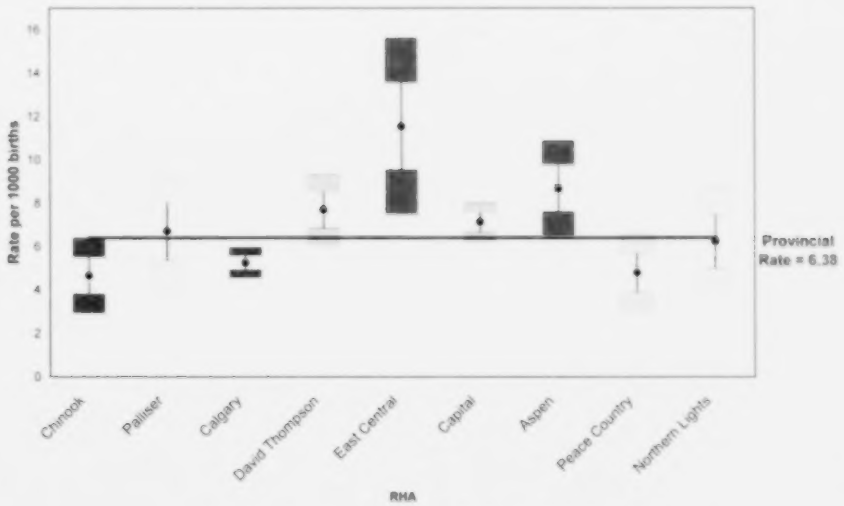


Source: Vital Statistics Death File and Birth File, May 2006 release

A look at the regional map shows that the Aspen and East Central health regions had an infant mortality rate higher than the provincial average for 2003-05 combined. Calgary and Chinook had lower rates than the provincial average.

Figure 18: Regional Differences in Infant Mortality Rates, 2003 - 05 combined





Source: Vital Statistics, Death File & Birth File, May 2006 release

Birth Weight

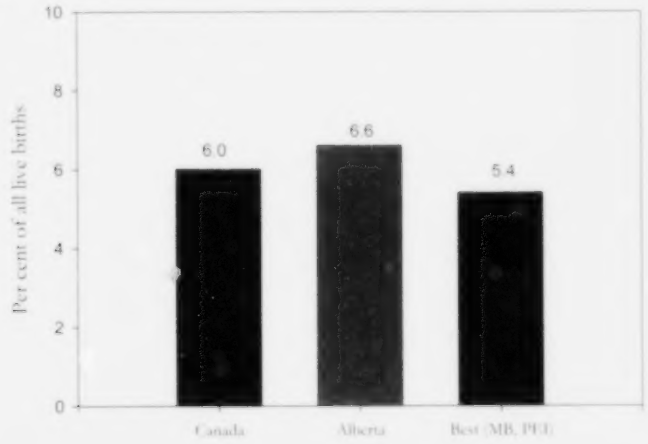
Birth weight is an indicator of the health status of newborns. Adequate prenatal growth is essential for future growth and development. Low birth weight (LBW) babies – those who weigh less than 2,500 grams (5.5 pounds) at birth – are more likely to have birth-related complications, disabilities, and other health problems. They are also more likely to have developmental delays, learning and behavioural problems and long-term health problems. Very low birth weight (VLBW) babies – those under 1,500 grams or 3.5 pounds – are especially likely to have long-term health problems and to require higher levels of health care throughout their lives.

Low birth weight babies may be pre-term, small for gestational age, or both. Compared to babies who are pre-term but have growth appropriate for their gestational age, babies who are small for gestational age have greater risk of developing health problems.

Factors associated with low birth weight include premature birth, multiple pregnancy, congenital anomalies, acute or chronic disease in the mother, and maternal age. Alcohol consumption, smoking and illicit drug use during pregnancy have also been linked to low birth weight. Low socioeconomic status can contribute through inadequate nutrition, poor living conditions, and a lack of prenatal care.

In 2005, 6.6 percent of all live births in Alberta were considered to be low or very low birth weight infants. This percentage is higher than the Canadian average (5.9 per cent), and the best provinces, Manitoba and Prince Edward Island (5.4 per cent).

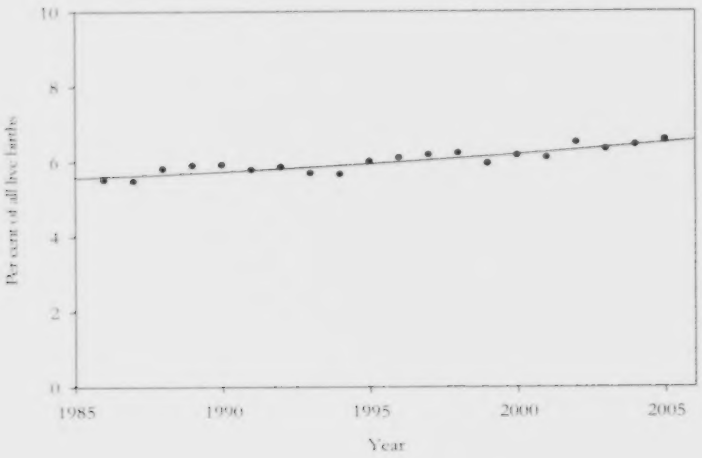
Figure 19: Low Birth Weight, 2005 (Canada, Alberta, Best Province)



Source: Statistics Canada, Health Indicators Database

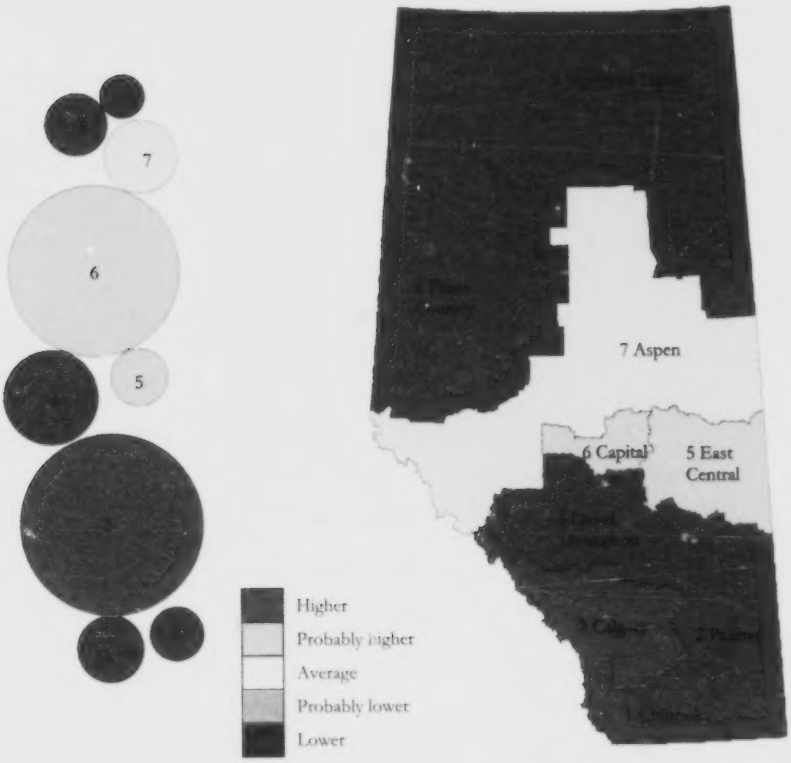
The incidence of low birth weight in Alberta has followed a slight but steady increase over the last 20 years.

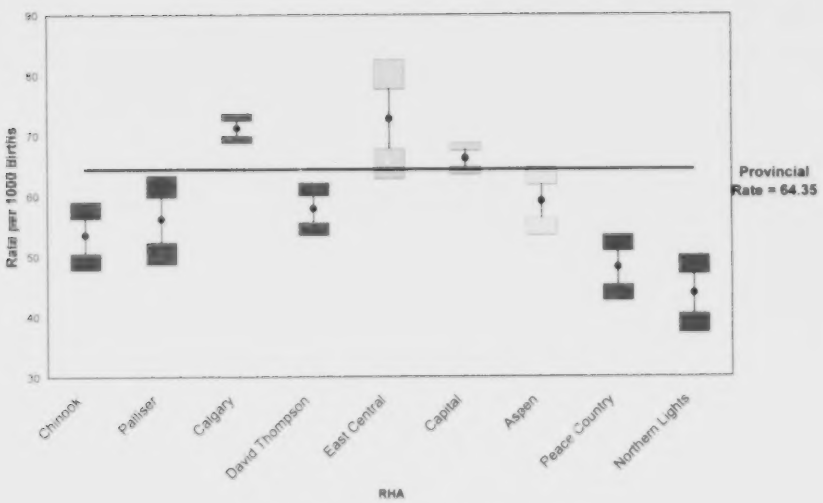
Figure 20: Trends in Low Birth Weight in Alberta, 1986 - 2005



Source: Vital Statistics, Birth File, May 2006 release

Figure 21: Regional Differences in Low Birth Weight, 2003 - 05 combined



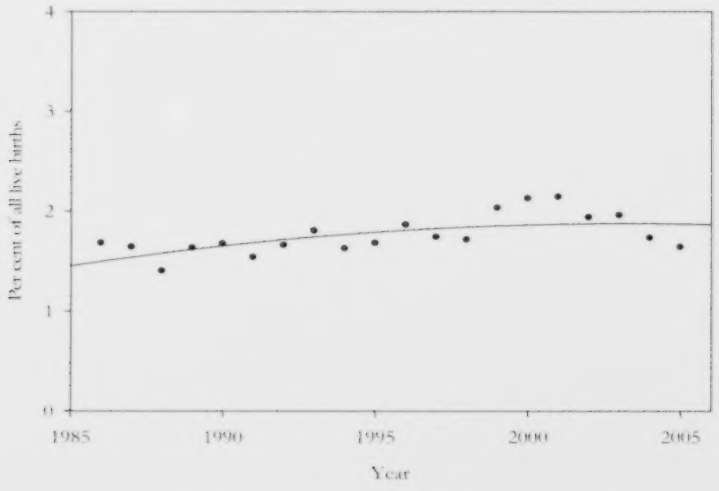


Source: Vital Statistics, Birth File, May 2006 release

Babies that are large for their gestational age can also be more susceptible to health problems. Poorly controlled diabetes mellitus and gestational diabetes are the primary causes of high birth weight babies. Diabetes increases plasma glucose and insulin levels of the mother which stimulates the fetus to grow. Large babies can cause complications during delivery, and may also be more prone to developing diabetes in later life.

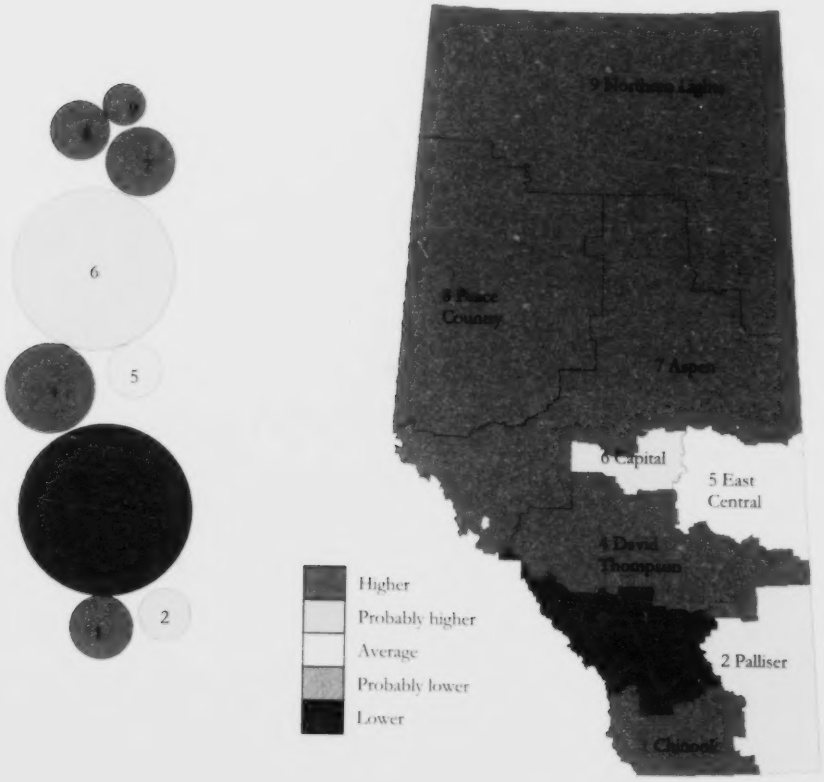
High birth weight babies are classified for this report as those who weigh equal to or over 4500 grams (9.9 pounds) at birth. The incidence of high birth weight is low in Alberta making up 1.6 percent of all live births in 2005. The incidence of high birth weight has remained fairly stable over the last two decades.

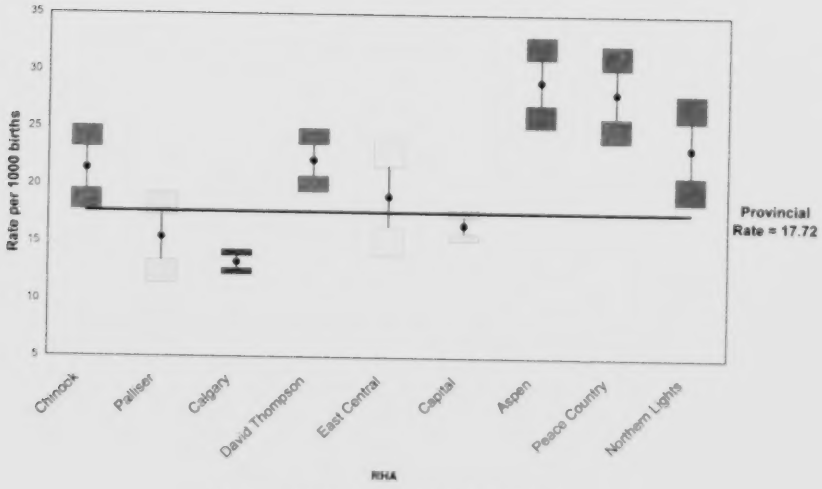
Figure 22: Trends in High Birth Weight in Alberta, 1986 - 2005



Source: Vital Statistics, Birth File, May 2006 release

Figure 23: Regional Differences in High Birth Weight, 2003 - 05 combined





Source: Vital Statistics, Birth File, May 2006 release

Congenital Anomalies

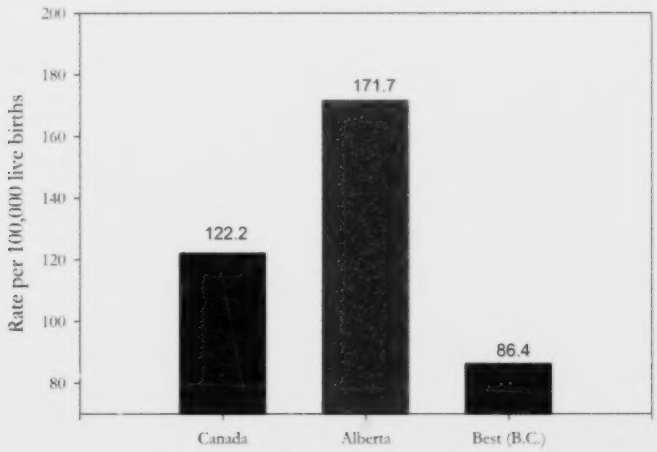
Congenital anomalies are a major contributor to infant mortality. Congenital anomalies represent a wide range of birth defects including heart malformations, skeletal deformities, and body chemistry imbalances. They range from minor to severe, and may result in debilitating disease, physical or mental disability, or early death.

Congenital anomalies may be inherited, or they may result from interference in the womb or from environmental factors such as chemicals or pollutants. Although the causes of most birth defects are unknown, several have been identified. These causes include heredity, genetic abnormalities, chromosomal abnormalities, infections, some prescription and non-prescription drugs, alcohol, smoking, malnutrition, and environmental effects.

Few birth defects can be attributed to a single cause; most result from the interaction between environmental factors and heredity. The outcome depends on inherited susceptibility, the degree of exposure to a hazard, and the stage of pregnancy at which exposure occurs.

In 2004, deaths due to congenital anomalies in infants under one year of age in Alberta was the second highest across the provinces at (171.7). The national average was 122.2 and the best province, British Columbia was 86.4. Alberta's higher rate may in part be due to better case ascertainment and reporting.

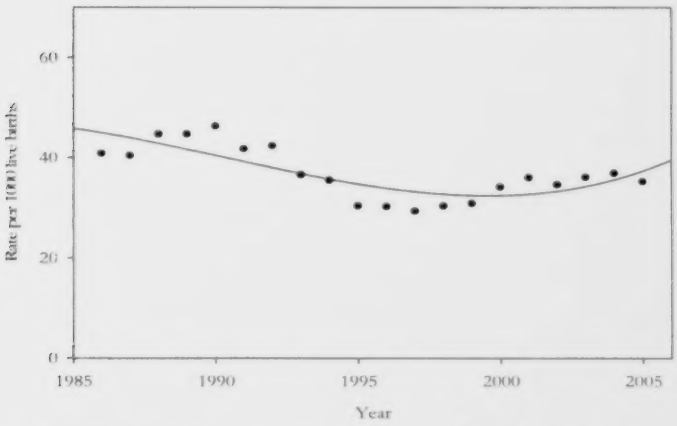
Figure 24: Mortality Rate from Congenital Anomalies, 2004 (Canada, Alberta, Best Province)



Source: Statistics Canada, Health Indicators Database

Over 1,200 babies in Alberta are annually diagnosed with birth defects before their first birthday. In 2005, 1468 babies were born with congenital anomalies *(Alberta Reproductive Health Report, 2006)*. Over the past 20 years, the birth prevalence of congenital anomalies decreased during the first decade, and now appears to be increasing again for some categories.

Figure 25: Trends in Congenital Anomalies in Alberta, 1986 - 2005



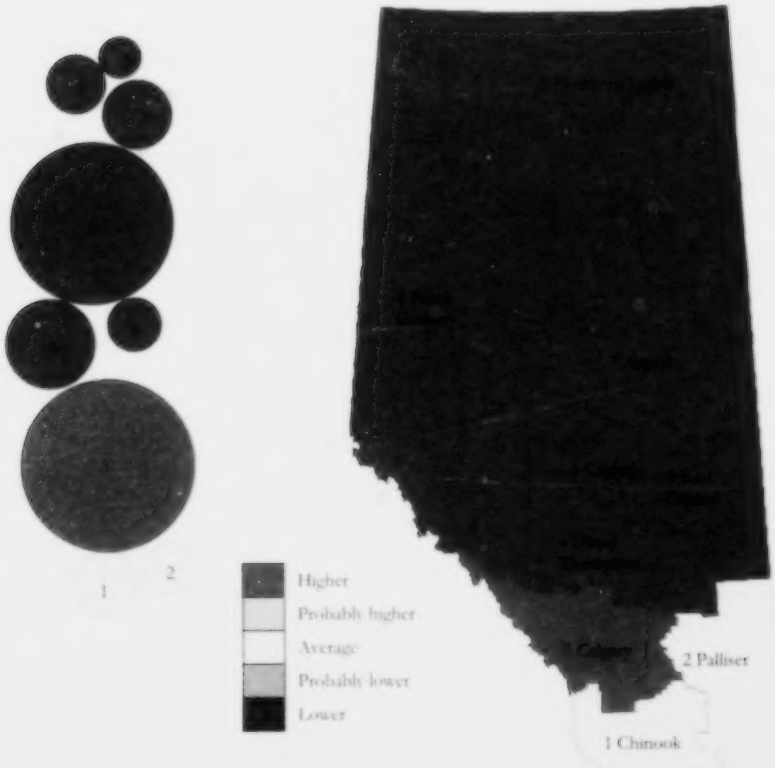
Source: Alberta Congenital Anomalies Surveillance System (ACASS), July 2006 release
Infants diagnosed with congenital anomalies before their first birthday.

Pre-conception screening for maternal infections and other conditions that may affect the first eight weeks of fetal development is important in preventing congenital anomalies. Establishing good health habits before conception is also important. For example, folic acid supplements taken prior to conception can help prevent neural tube defects.

The availability of genetic services for at-risk couples can help reduce congenital anomalies. Gene analysis, chromosome studies, and biochemical analyses can be done to gather data for diagnosis and treatment of genetic disorders, and to give accurate information to those concerned. Education is also an indispensable tool in preventing congenital anomalies. Teaching prospective parents about how to have a healthy pregnancy is essential.

The rate of all congenital anomalies was higher than the provincial average in the Calgary Health Region. This higher rate may in part be due to better case ascertainment and reporting in the Calgary Health Region. For more detailed information on specific birth defects as they pertain to the Alberta context please refer to the report entitled *Alberta Congenital Anomalies Surveillance Report.* This report is updated on an ongoing basis.

Figure 26: Regional Differences in Congenital Anomalies, 2003 – 05





Source: Alberta Congenital Anomalies Surveillance System (ACASS), July 2006 release

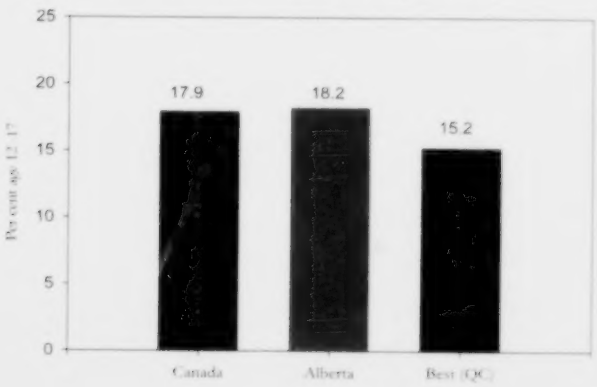
Childhood Overweight and Obesity

Body Mass Index (BMI) is defined as a person's weight in kilograms, divided by their height in meters squared. International norms have recently been developed that allow for the classification of children aged 2 to 17 as "overweight" or "obese" based on BMI (Cole et al., 2000).

There is concern that overweight and obese children may have a higher risk of developing health problems in later life such as type II diabetes, asthma, arthritis, high blood pressure, hyperlipidemia and thyroid conditions. Further overweight children may also suffer from more emotional stress and lower self-esteem than their normal weight counter parts.

The Canadian Community Health Survey, Cycle 3.1 asked a sample of Canadian Children aged 12-17 years to report their height and weight. From this survey, national and provincial rates for overweight and obese children were estimated. In 2005, Alberta had a slightly higher estimated percentage of overweight children (18.2 per cent) than the Canadian average (17.9 per cent), and Quebec, the province with the lowest percent 15.2.

Figure 27: Percentage of children aged 12 to 17 classified as "obese" or "overweight", 2005 (Canada, Alberta, and best province)

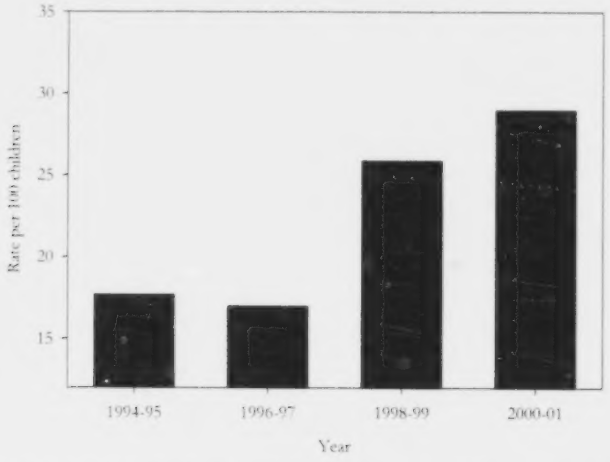


Source: Statistics Canada, Canadian Community Health Survey (CCHS 3.1), 2005

Increases in rates of overweight and obesity in children has been widely reported. However, data on childhood overweight and obesity has only recently been collected on a national and provincial scale, and is only widely available as self-reported measures. In Statistics Canada's National Longitudinal Survey of Children and Youth (NLSCY), height and weight were reported by parents for a sample of Canadian children.

The following table shows the rate of overweight or obesity per 100 children aged 10 and 11 years old in Alberta since 1994-95. Despite the appearance of a rising trend, the confidence intervals reveal that no time trend exists during this time period. Because this data represents only a short time frame, and is based on self-report, trends cannot be inferred. For a more in-depth look at overweight and obesity in children, see the *Alberta Child Health Surveillance Report, 2005.*

Figure 28: Trends in overweight children aged 10 to 11 years (1994-2001)



Source: National Longitudinal Survey of Children and Youth, Cycle 4, Statistics Canada, 2005
Notes: Children are classified as overweight based on BMI, as per Cole et al. (2000) norms. Data may differ from previously published data due to differences in definitions and dates of data extraction.

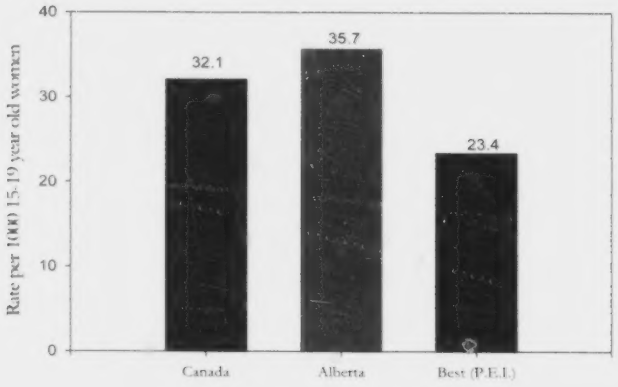
Due to sampling variability and small sample sizes of provincial data, regional health authority comparisons can not be made for childhood overweight or obesity, but may be possible in future reports.

Teenage Pregnancy

Births to teenage mothers are associated with low birth weight and pre-term birth. Pregnant teenagers are at an increased risk of emotional distress and complications related to pregnancy, such as preclampsia and anemia. However, age is mediated by other factors such as poverty, lack of education, poor family support, and lack of prenatal care.

In 2003, the teenage pregnancy rate in Alberta was 35.7 pregnancies per 1,000 women aged 15 to 19. This rate is somewhat higher than the national average (32.1 per 1,000 females). PEI had the lowest rate (23.4 per 1,000 females aged 15-19 years).

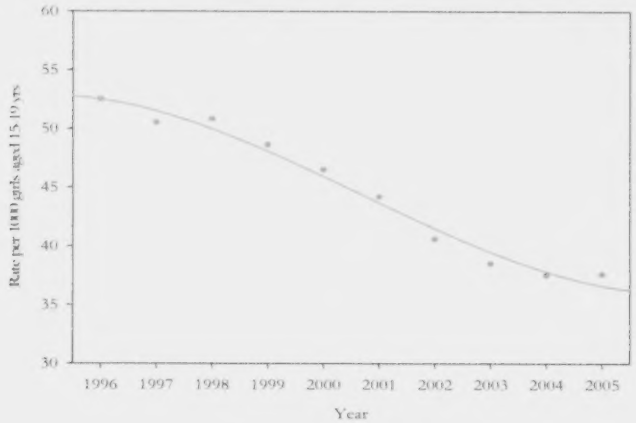
Figure 29: Teenage Pregnancy for Girls Aged 15-19 years, 2003 (Canada, Alberta, Best Province)



Source: Statistics Canada Health Indicators Database

Between 1996 and 2005, the rate of teen pregnancy in Alberta decreased. However, since 2003 it appears to be leveling out. For a more detailed description of teen pregnancy in Alberta see the *Alberta Reproductive Health Pregnancies & Births Report, 2006*. For a more detailed description of pregnancy in girls 10-17 years of age see, the *Alberta Child Health Surveillance Report, 2005*.

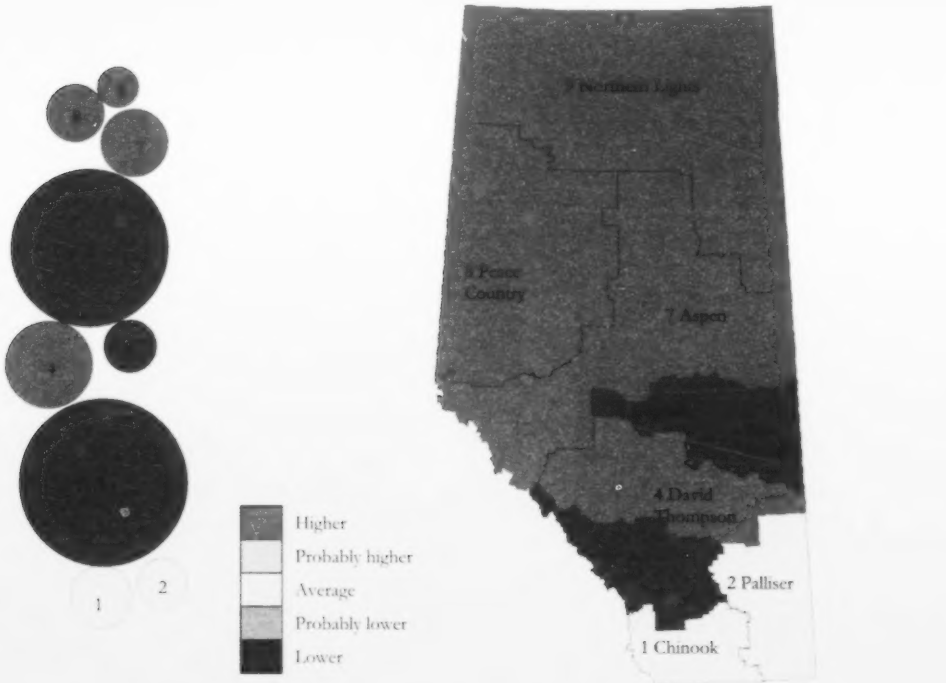
Figure 30: Trends in Teenage Pregnancy in Alberta, 1996 – 2005

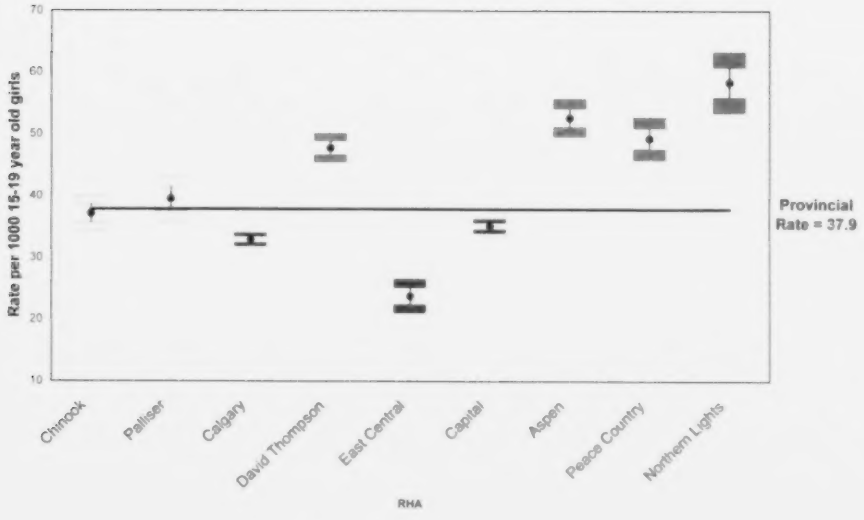


Source: Vital Statistics, Birth File

A look at the regional map reveals higher teen pregnancy rates than the provincial average in the northern half of the province and the David Thompson health region. The Capital, Calgary and East Central regions had lower rates than the provincial average.

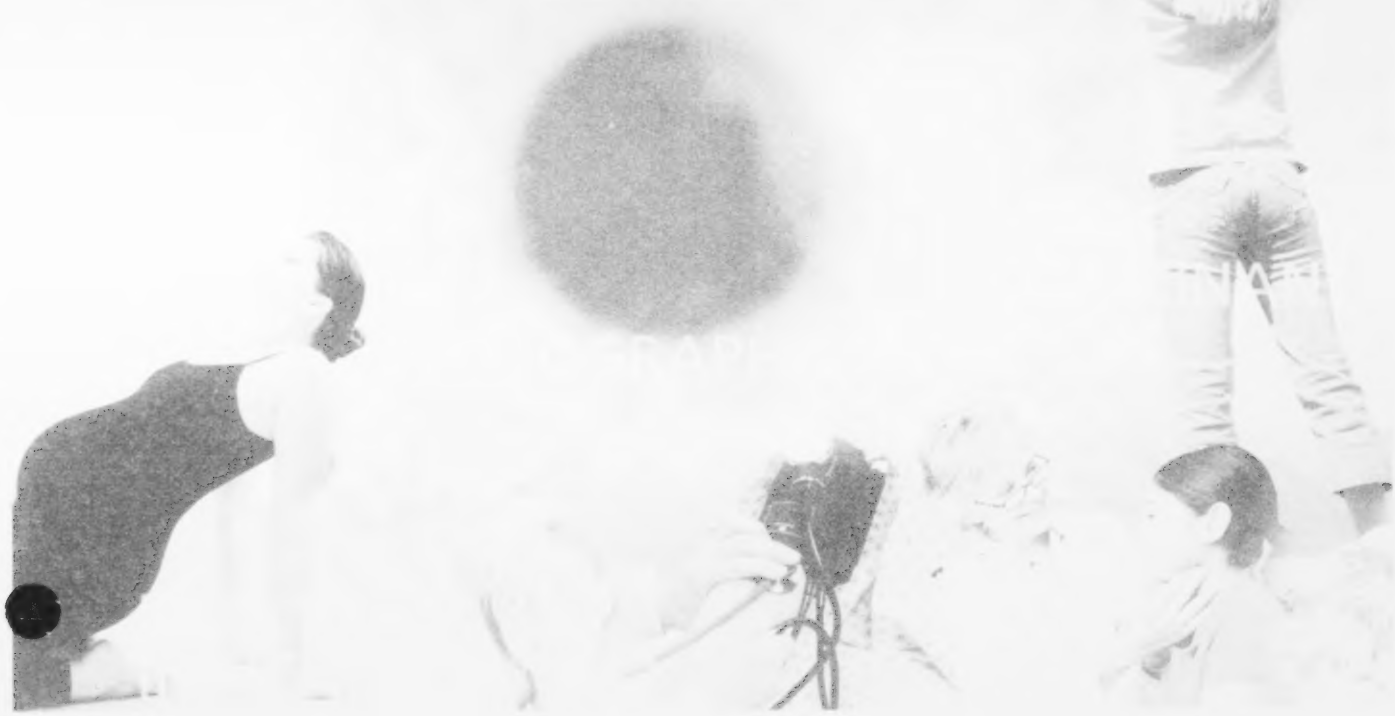
Figure 31: Regional Differences in Teenage Pregnancy, 2003 - 05 combined





Source: Vital Statistics, Birth File, May 2006 release

C: Health Status and Determinants



Health Trends in Alberta:
A Working Document

Alberta

SECTION C: HEALTH STATUS AND DETERMINANTS

Data for this section come from population health surveys conducted by Statistics Canada including the Canadian Community Health Survey and the National Population Health Survey.

Other data sources are the National Council of Welfare, Statistics Canada Health Indicators Database and the Alberta Vital Statistics database.

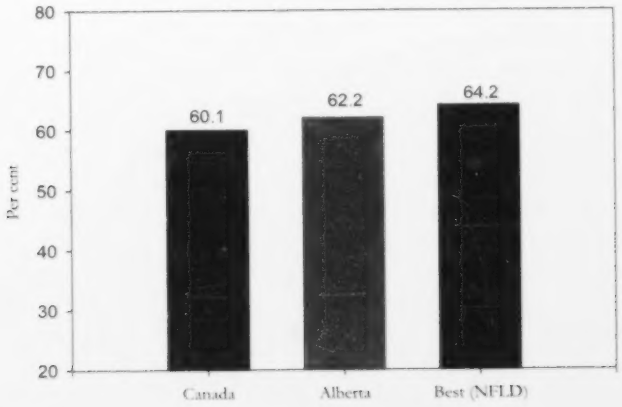
The specific data source is indicated for each graph.

Self-reported Health

Health is much more than just the absence of illness or disability. It is a state of physical, emotional, and social well being.

Self-reported health status -- the subjective experience of how healthy a person feels -- is an important health indicator that provides an indication of general population health status. In 2005, almost two out of three (62.2 per cent) Albertans reported that their health was very good or excellent. This proportion was slightly higher than the national average of 60.1 per cent. Newfoundland and Labrador had the highest percentage in the country at 64.2 per cent; however this was not significantly different from Alberta.

Figure 32: Self-Reported Health Status "Very Good" or "Excellent" (Canada, Alberta, Best Province)

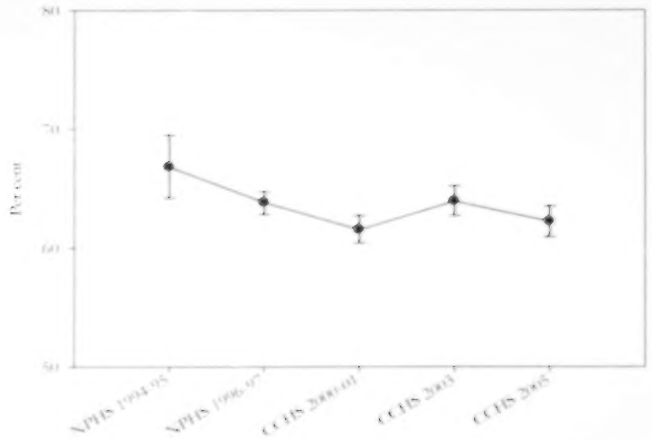


Source: Statistics Canada, Canadian Community Health Survey, 2005 (age 12+)

Over the past 10 years, self-reported health status has been fairly constant in Alberta. Slightly higher results in years measured by the National Population Health Survey (NPHS) may reflect a slight difference in the wording of the question in the NPHS.

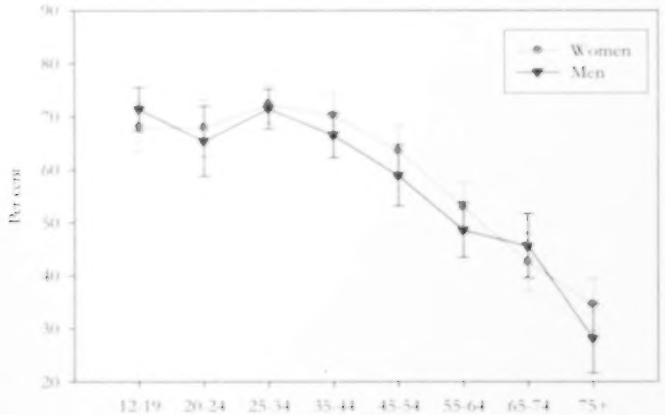
The percentage of Albertans who report their health to be "very good" or "excellent" decreases with increasing age. There was little difference between men and women for this indicator in 2005.

Figure 33: Trends in Self-Reported Health Status "Very Good" or "Excellent"
Alberta, 1994 - 2005



Sources: Statistics Canada, National Population Health Survey (age 12+); Canadian Community Health Survey (age 12+)

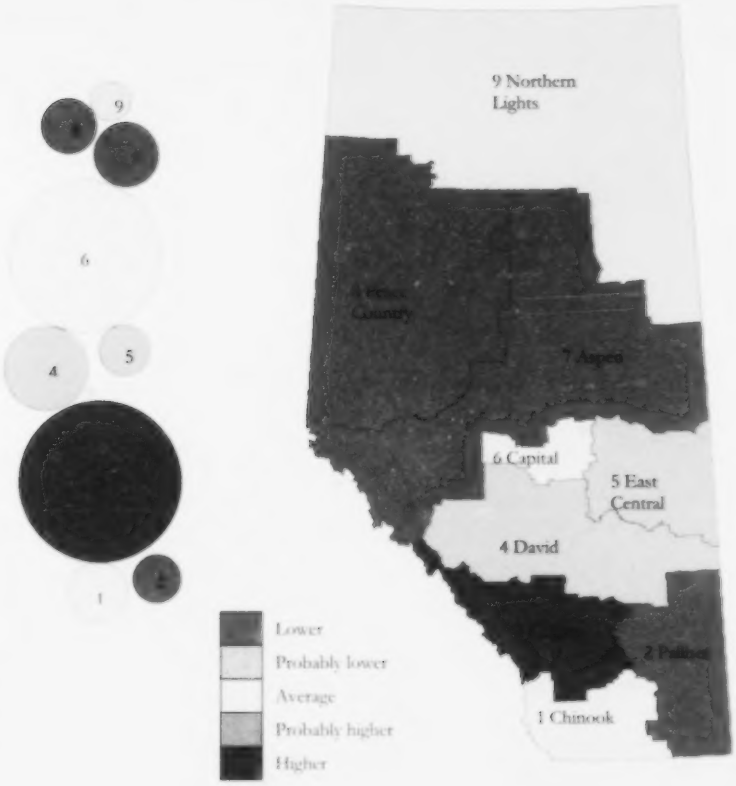
Figure 34: Self-Reported Health Status "Very Good" or "Excellent" by Age and Sex

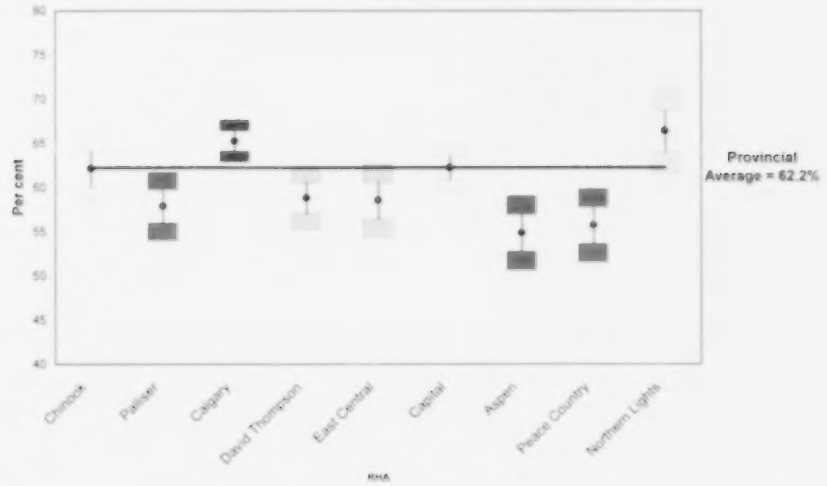


Sources: Statistics Canada, Canadian Community Health Survey, 2005

The Calgary and Northern Lights health regions had a higher percentage of people who reported their health as very good or excellent compared to the provincial rate. Peace Country, Aspen, and Palliser regions had a lower percentage reporting very good or excellent health.

Figure 35: Regional Differences in Self-Reported Health Status "Very Good" or "Excellent", 2005





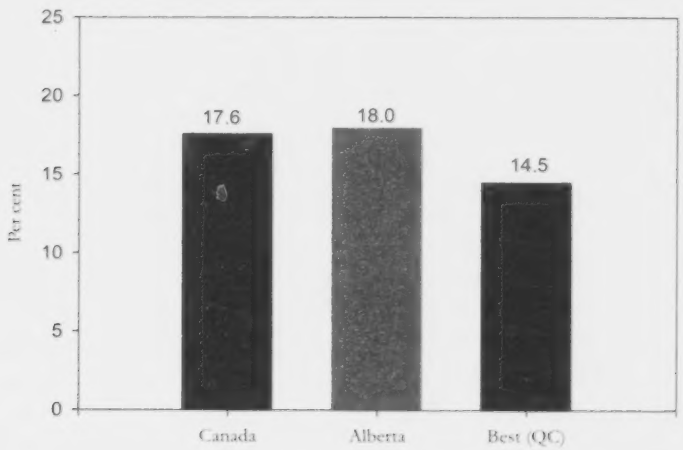
Sources: Statistics Canada, Canadian Community Health Survey, 2005

Health Utility Index

The Health Utility Index (HUI) was developed at McMaster University's Centre for Health Economics and Policy Analysis and measures overall functional health, based on eight dimensions of functioning (vision, hearing, speech, mobility, dexterity, feelings, cognition and pain). A score of 0.8 to 1.0 indicates very good or perfect health. A score below 0.8 indicates moderate or severe functional health problems.

In 2005, 18 per cent of Albertans who were 12 years and older reported moderate to severe functional health problems. These functional limitations may affect many aspects of an individual's life such as access to transportation, employment and leisure activities. Alberta's percentage is similar to the Canadian average (17.6 per cent), and somewhat higher than that of the best province, Quebec (14.5 per cent).

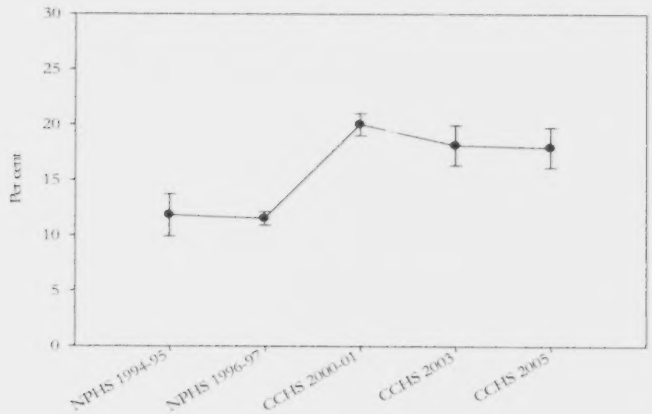
Figure 36: Moderate or Severe Functional Health Problems
(Canada, Alberta, Best Province)



Source: Statistics Canada, Canadian Community Health Survey, 2005 (age 12+)

The percentage of Albertans reporting moderate to severe functional health problems increased from the mid 1990s and has remained fairly stable over the last three measurement points. Slightly higher results in years measured by the Canadian Community Health Survey (CCHS) may reflect a slight difference in the wording of the question.

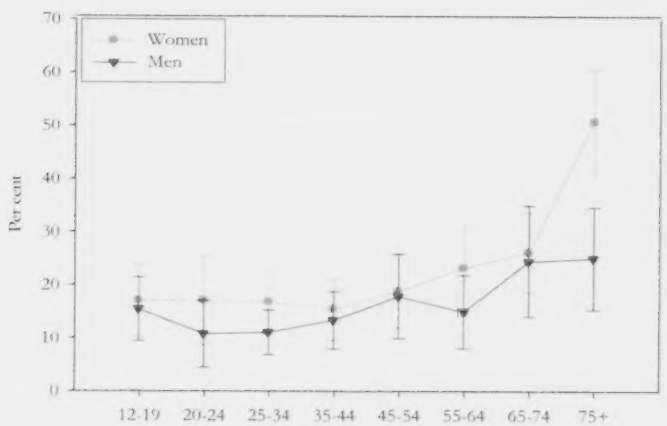
Figure 37: Trends in Self-Reported Moderate or Severe Functional Health Problems
Alberta, 1994 - 2005



Sources: Statistics Canada National Population Health Survey; Canadian Community Health Survey

The percentage of Albertans reporting moderate to severe functional health problems is fairly constant across different age groups until older adulthood where it increases, especially for women. *These results should be used with caution due to a large coefficient of variation.* Sample sizes were not large enough to calculate regional rates for this measure so maps are not provided.

Figure 38: Moderate or Severe Functional Health Problems by Age and Sex



Sources: Statistics Canada, Canadian Community Health Survey, 2005

Life Expectancy

Life expectancy is "the average number of years an individual of a given age is expected to live if current mortality rates continue to apply" (Last, J. *Dictionary of Epidemiology*, 3rd edition, Oxford University Press, New York, 1995. p 59.). A higher life expectancy at birth is frequently interpreted as an indicator that a population is healthy, has adequate access to health care, has healthy diets, and is protected from the effects of environmental, workplace, or other hazards that would shorten life.

Life expectancy is calculated using estimates of age-specific mortality rates for a defined population over a circumscribed time period. Because these estimates depend upon large populations for stability, life expectancy is most often interpreted for large populations. Measures of variability should be calculated if the measure is to be employed on smaller regional populations. The following tables show the life expectancy at birth for females and males separately compared with Canada and the best province, British Columbia.

Figure 39: Female Life Expectancy at Birth, 2004 (Canada, Alberta, Best Province)

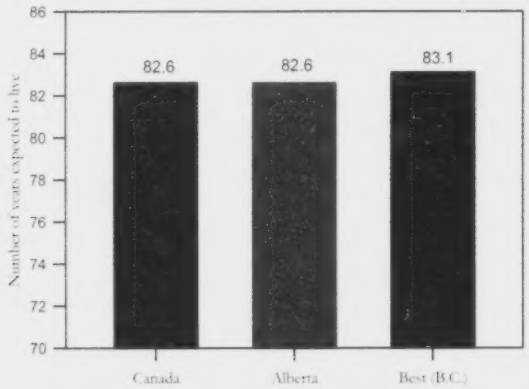
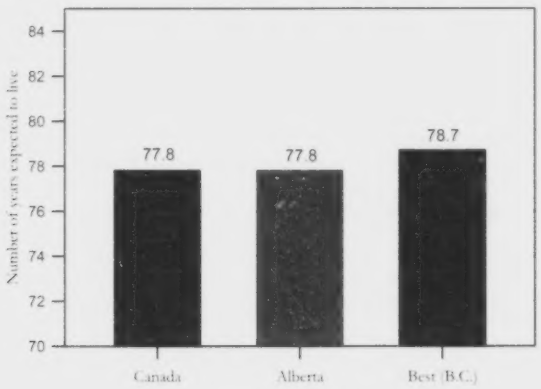


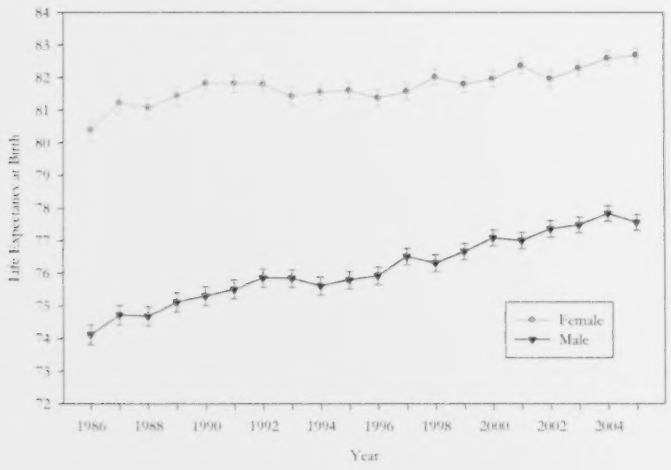
Figure 40: Male Life Expectancy at Birth, 2004 (Canada, Alberta, Best Province)



Source: Statistics Canada

The figure below shows the life expectancy at birth for Alberta males and females from 1986 to 2005. There is a general upward trend, slightly more marked for males than for females.

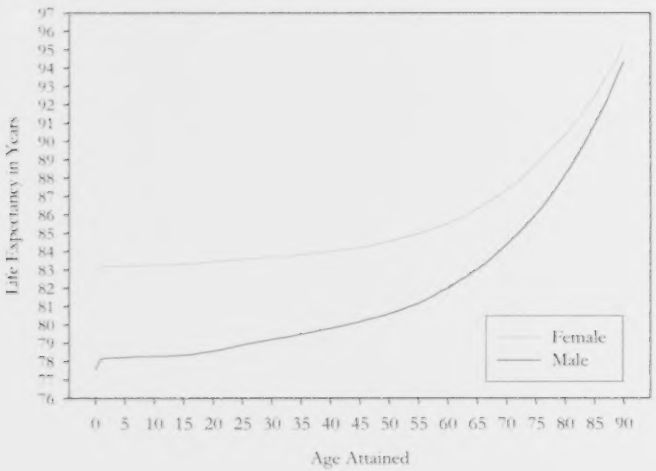
Figure 41: Trends in Alberta Life Expectancy at Birth 1986 - 2005



Source: Surveillance & Environmental Health, Alberta Health & Wellness

As individuals continue to survive through time, their life expectancies increase as they continue to avoid premature death. For example, a male who was 65 years of age in 2005 will have a life expectancy of about 83 years, while a female who was 65 years of age will have a life expectancy of about 86.5 years. These figures are of particular importance for planning the delivery of services for older adults.

Figure 42: Conditional Life Expectancy, Alberta, 2005



Source: Surveillance & Environmental Health, Alberta Health & Wellness

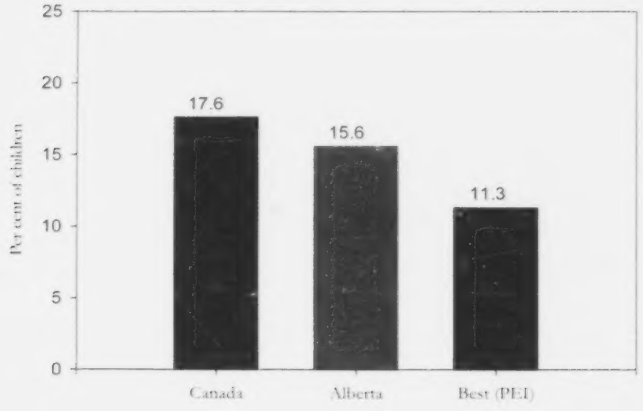
Childhood Poverty

Living in poverty increases the risk of poor health and is associated with decreased life expectancy. Children living in poverty are particularly at risk. They are more likely to have poorer nutrition, increased infections, and are often not well prepared for school entry. The effects of childhood poverty can often be measured well into adulthood.

For the purposes of this section, "children" are defined as those under the age of 18; "living in poverty" is defined as the situation when 55 per cent or more of the child's family income is being spent on shelter, food and taxes. This cutoff, called the Low Income Cut-offs (LICOs) measure has been created by Statistics Canada. LICOs rates are updated annually by Statistics Canada using the Consumer Price index, and vary based on family size and population of the area in which the family or person resides.

In 2003, Alberta had the second lowest child poverty rate in the country at 15.6 per cent. This was below the national average of 17.6 per cent and higher than the 11.3 per cent reported for Prince Edward Island, the province with the lowest rate.

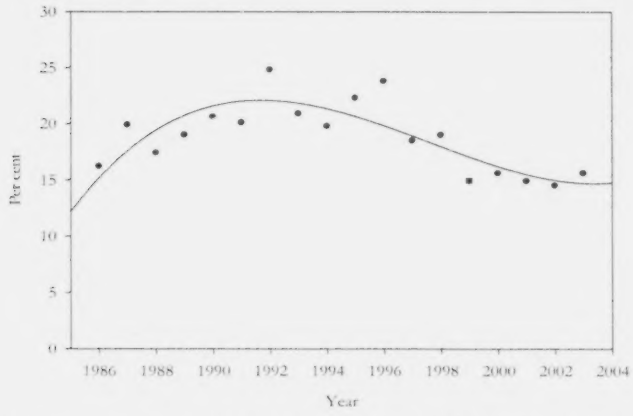
Figure 43: Percentage of Children in Families Living Below the Poverty Line
(Canada, Alberta, Best Province, 2003)



Source: Poverty Profile 2002 and 2003, National Council of Welfare, summer 2006

The trend in child poverty in Alberta since 1986 shows an increase during the late 1980s until the mid 1990s, when it appears to decrease and level out.

Figure 44: Trends in Child Poverty, Alberta, 1986 - 2003

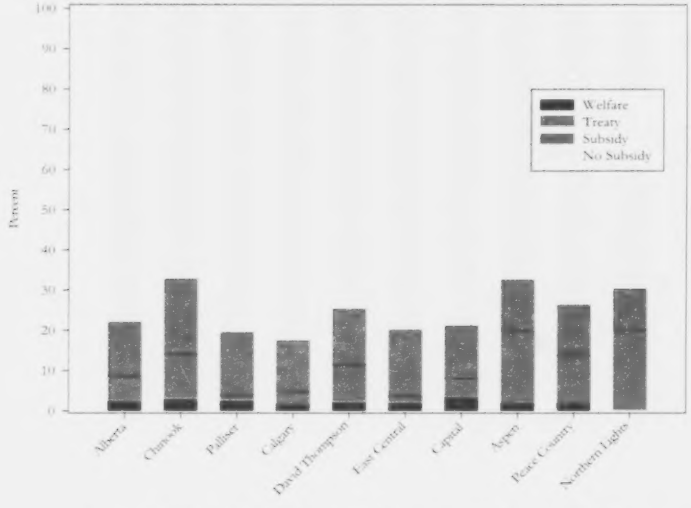


Source: Poverty Profile 2002 and 2003, National Council of Welfare, summer 2006

Comparable figures for each of Alberta's nine regional health authorities are not available. However, the Alberta Health Care Insurance Plan (AHCIP) Stakeholder Registry can be used as a proxy for low income. Partial subsidies and waivers of AHCIP premiums are available to families with children who have an adjusted taxable income below $39,250 and above $32,210. Full premium subsidies are available to families with children who have incomes below $32,210.

For fiscal year 2006, 77.9 per cent of children under the age of 18 were in families not requiring a subsidy in paying AHCIP premiums. Low income families comprised 13.5 per cent of children, and families on social assistance (welfare) comprised 2.5 per cent of children; 6.4 per cent of children were in families with treaty aboriginal status who qualify for subsidies from the federal government regardless of family income.

Figure 45: Percent of Families with: AHCIP Subsidy; No Subsidy; Welfare; or Treaty Status: 2006



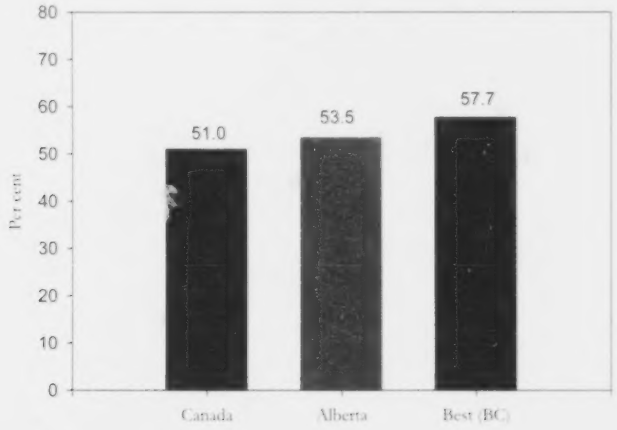
Source: Alberta Health Care Insurance Plan Stakeholder Registration File

Physical Activity

Regular physical activity relieves stress, builds strength, increases resistance to disease and injury, improves cardiovascular fitness, and helps maintain healthy weight levels. The Canadian Community Health Survey (CCHS) classifies respondents as active, moderately active or inactive based on an index of average daily physical activity over three months. For each leisure time physical activity engaged in by the respondent, average daily energy expenditure is calculated by multiplying the frequency of the activity by the average duration of the activity, by the energy cost (kilocalories per kilogram of body weight per hour) of the activity. The index is calculated as the sum of the average daily energy expenditures of all activities. Respondents are classified as follows: 3.0 kcal/kg/day or more = physically active; 1.5 to 2.9 kcal/kg/day = moderately active; less than 1.5 kcal/kg/day = inactive.

In 2005, 53.5 per cent of Albertans were classified as moderately active to active. This is higher than the national average of 51 per cent, but less than the best province, British Columbia with 57.7 per cent.

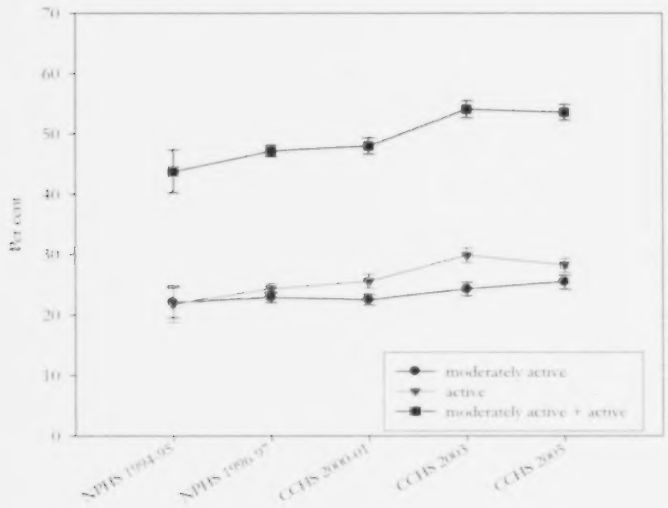
Figure 46: Percent of Population (age 12+) Moderately Active and Active, 2005
(Canada, Alberta, Best Province)



Source: Statistics Canada, Canadian Community Health Survey, 2005

Over the past decade, the proportion of Albertans who reported moderate to active physical activity levels gradually increased until 2003, after which it leveled off. As shown in the graph, there was a greater increase in the percentage of Albertans classified as "active" versus "moderately active" until 2003. Despite a modest increase over the last 10 years, only about half (53.5 per cent) of Albertans 12 years and older reported enough physical activity to maintain or improve their health.

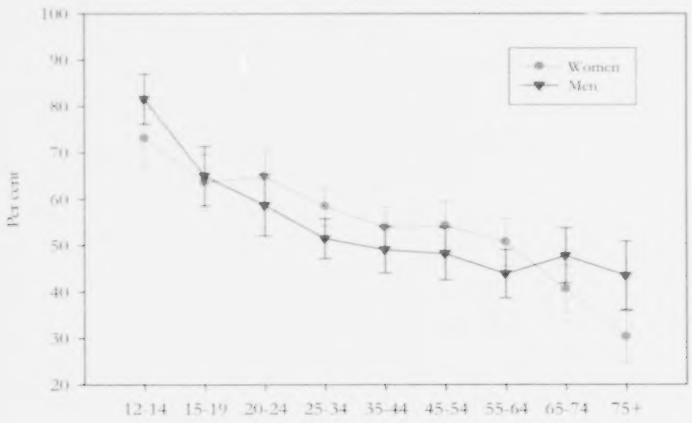
Figure 47: Trends in Moderately Active and Active Albertans, 1994 - 2005



Source: Statistics Canada, National Population Health Survey; Canadian Community Health Survey

Despite public health messages promoting physical activity, the percentage of Albertans who report at least moderate activity begins to drop in adolescence and continues to drop across the lifespan. There is little difference between men and women.

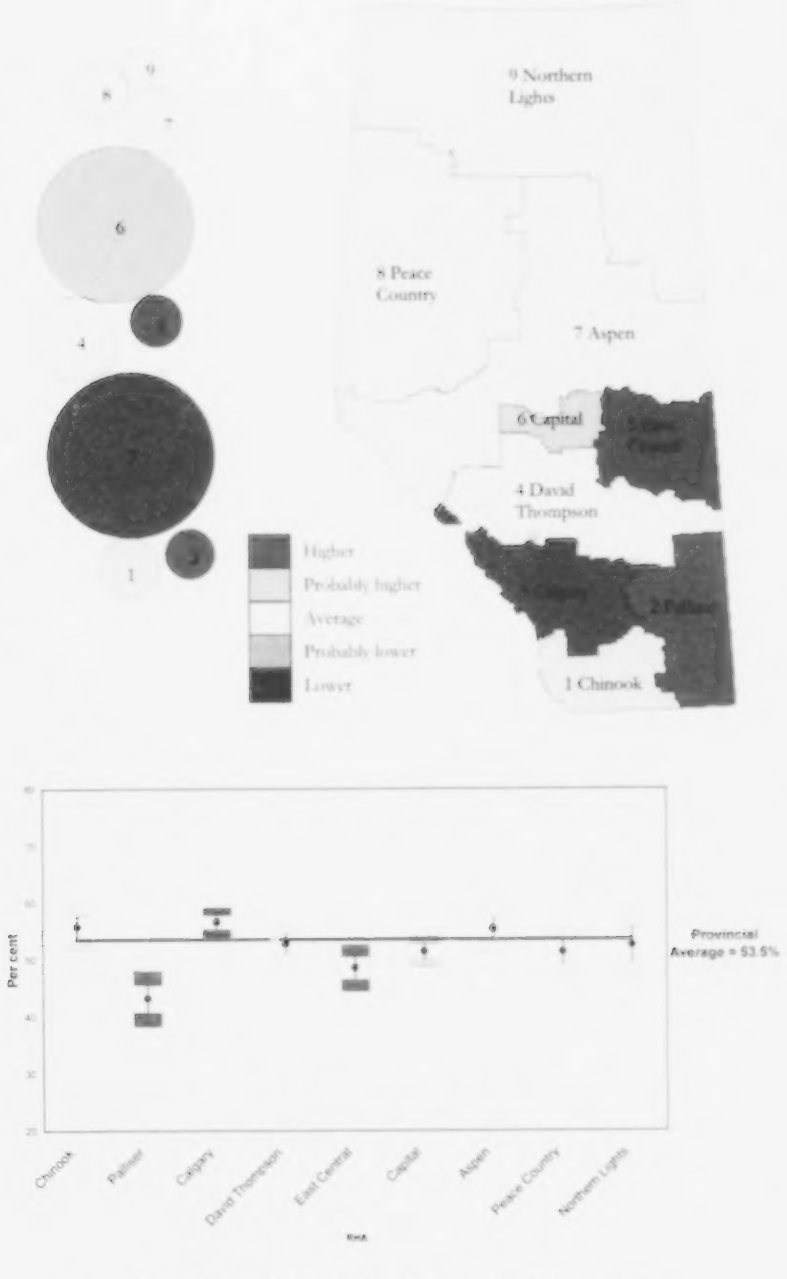
Figure 48: Moderately Active and Active Albertans by Age and Sex, 2005



Source: Statistics Canada, Canadian Community Health Survey, 2005

In 2005, the Calgary health region led the province with the highest percentage of people classified as moderately active or active. Palliser and East Central regions had percentages lower than the provincial average.

Figure 49: Regional Differences in Physical Activity, 2005



Source: Statistics Canada, Canadian Community Health Survey, 2005

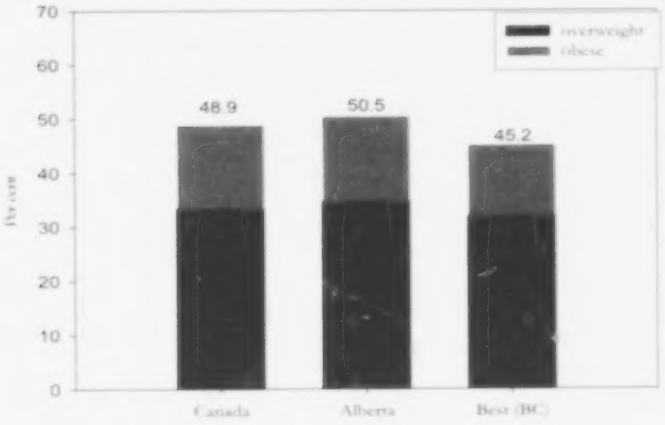
Body Mass Index

Body weight depends on various factors such as genetics, nutrition, mental health, and level of physical activity. Overweight and obesity are linked to a range of health problems, particularly cardiovascular disease and diabetes.

Body mass index (BMI) is a common measure used to determine whether a person is over or under the desirable weight for their height. BMI is calculated as 'weight in kilograms' divided by 'height in metres' squared. Adults (aged 18 and over), excluding pregnant women and persons less than 3 feet or greater than 6 feet 11 inches tall, may be considered overweight if they have a BMI greater than 25, and obese if they have a BMI of 30 or more.

In 2005, 34.7 per cent of Albertans surveyed were overweight and 15.8 percent were obese (based on self-report height and weight), for a total of 50.5 percent. Alberta was similar to the national average (48.9 percent) and higher than the best province, British Columbia (45.2 percent).

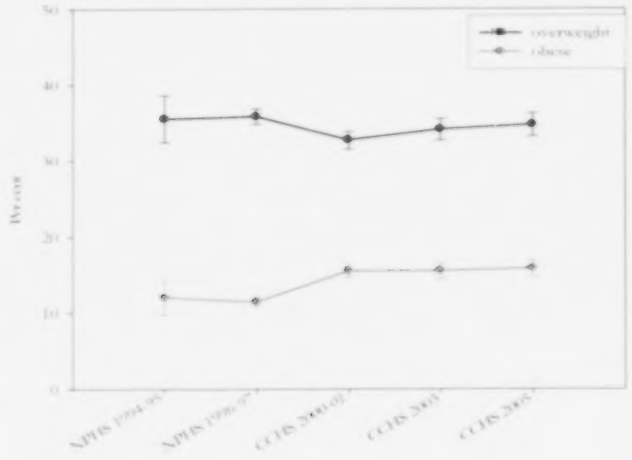
Figure 50: Overweight and Obese Adults, 2005 (Canada, Alberta, Best Province)



Source: Statistics Canada, Canadian Community Health Survey, 2005 (age 18+)

Between 1994 and 2005, the proportion of overweight and obese adults (based on self report) in Alberta has remained fairly stable, rising slightly from 47.5 per cent to 50.5 per cent. This means that in 2005, an estimated one out of every two adults in Alberta was overweight or obese. Despite public health messages promoting healthy eating, exercise, and healthy weight, the proportion of the population that is overweight or obese remains high.

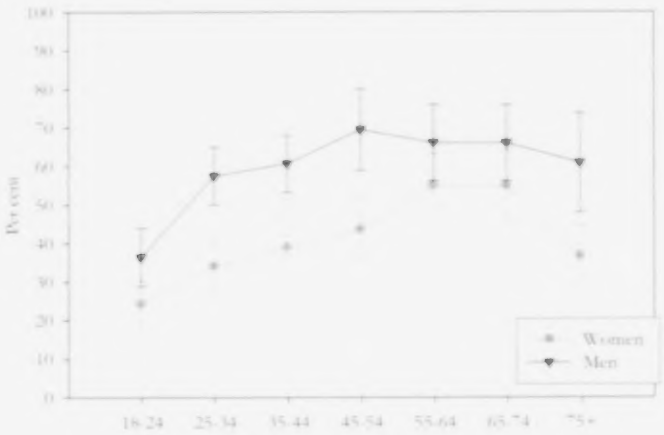
Figure 51: Trends in Overweight and Obese Adults in Alberta, 1994 - 2005



Source: Statistics Canada National Population Health Survey, Canadian Community Health Survey

In 2005, a greater percentage of older Albertans were overweight or obese than in younger age groups. Also a larger percentage of males were overweight than females. The highest proportion of overweight and obese adults occurs in middle aged males. Weight appears to rise with age for both sexes until around the seventh decade of life.

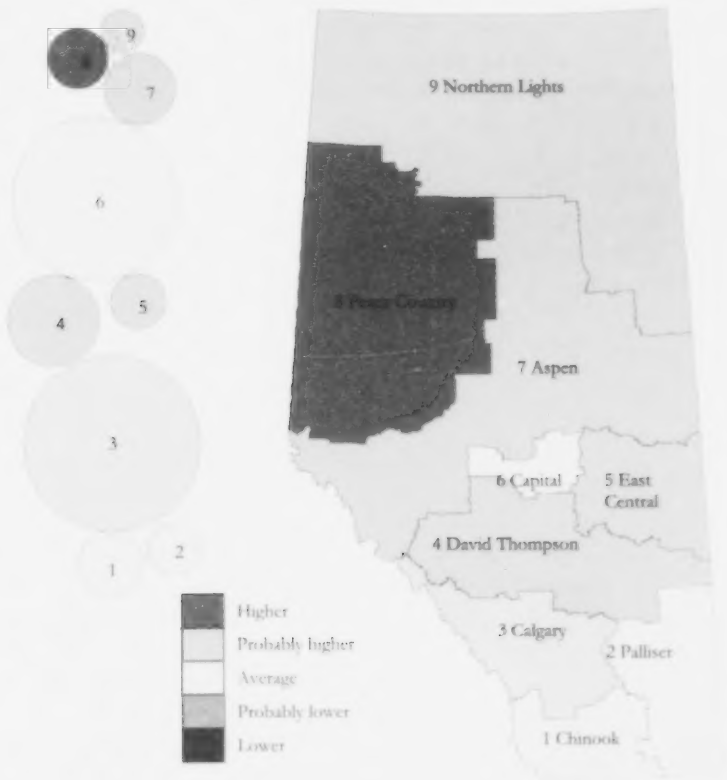
Figure 52: Age- and Sex-Specific Rates for Overweight and Obese Adults in Alberta, 2005

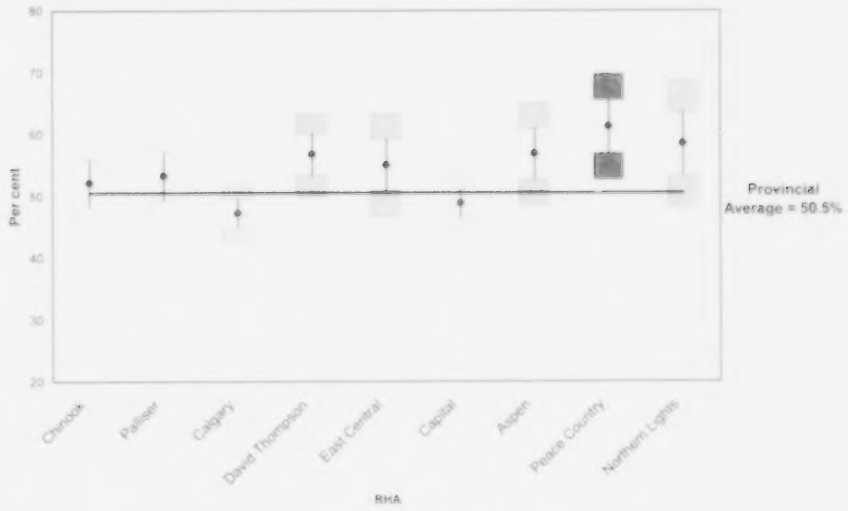


Source: Statistics Canada, Canadian Community Health Survey, 2005

Calgary region had a slightly lower percentage of overweight and obese people than the provincial average, while the Peace Country region percentage was higher than the provincial average

Figure 53: Regional Differences in Overweight and Obesity, 2005





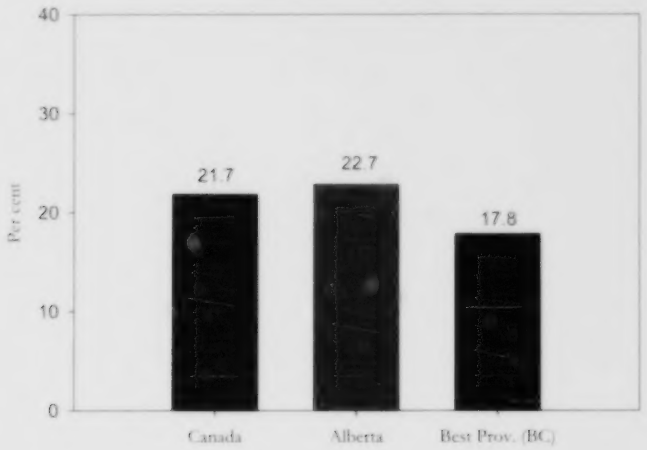
Source: Statistics Canada, Canadian Community Health Survey, 2005 (age 18+)

Tobacco Use

Tobacco use is a serious threat to health. Smoking or exposure to tobacco smoke is a known cause of heart disease and lung cancer as well as chronic obstructive pulmonary disease (COPD) and other respiratory diseases. Women who smoke during pregnancy are more likely to have low birth weight babies with increased risk of birth-related complications and chronic health problems. Children living with smokers are more prone to allergies, ear infections, coughs, and other respiratory ailments.

In 2005, 22.7 per cent of Albertans reported that they smoked cigarettes daily or occasionally. This is similar to the national rate (21.7 percent) and higher than the best province, British Columbia, at 17.8 per cent.

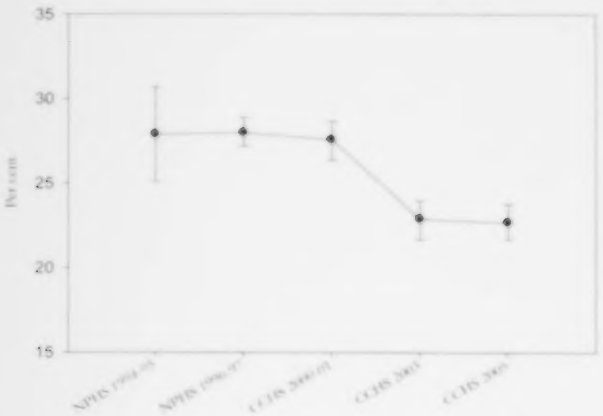
Figure 54: Current Cigarette Smokers in Alberta and Canada, 2005



Source: Statistics Canada, Canadian Community Health Survey (age 12+), 2005

Since the 1990s, the percentage of Albertans and Canadians who smoke cigarettes decreased and leveled off between 2003 and 2005.

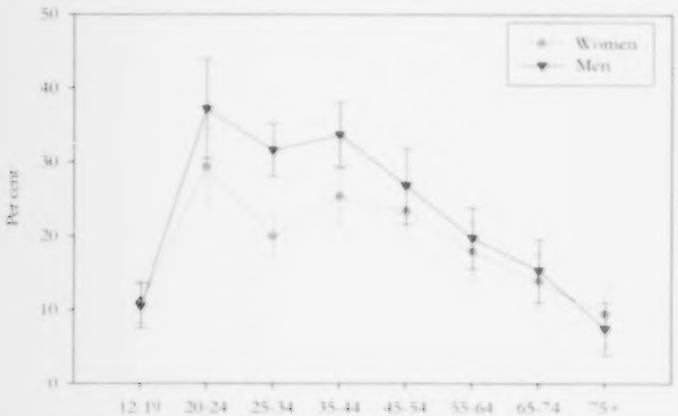
Figure 55: Trends in Cigarette Smokers in Alberta, 1994 – 2005



Source: Statistics Canada, National Population Health Survey ; Canadian Community Health Survey (age 12+)

As shown in the graph, the percentage of smokers for both males and females is highest in ages 20-24 years. For males in this age range the percentage of smokers is nearly 40 per cent, and for females nearly 30 percent. Smoking rates are similar for men and women across the lifespan except during the childbearing years where they are lower in women.

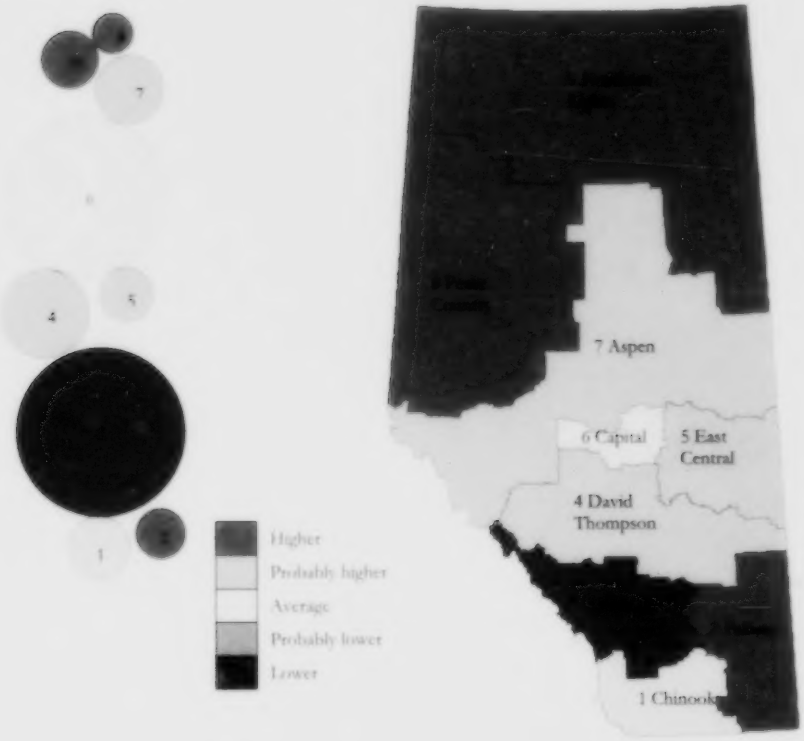
Figure 56: Age- and Sex-Specific Rates for Cigarette Smokers in Alberta, 2005

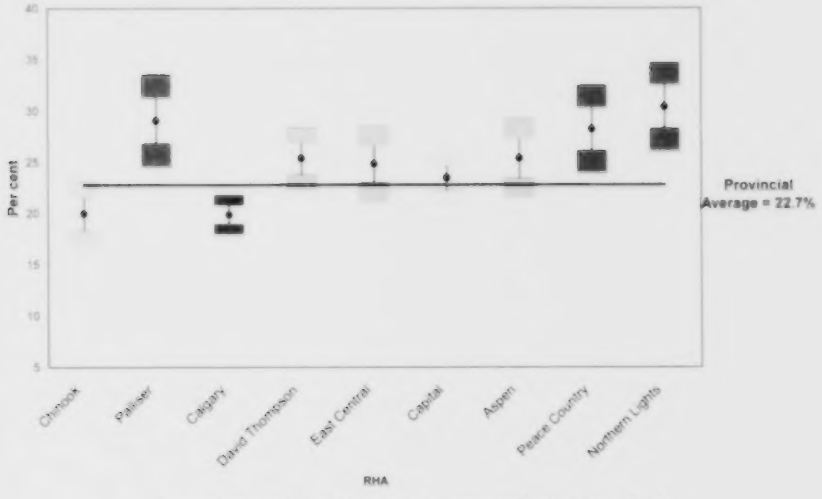


Source: Statistics Canada, Canadian Community Health Survey, 2005

Figure 57: Regional Differences in Smoking, 2005

The Palliser, Peace Country, and Northern Lights regions had a smoking rate higher than the provincial average. Calgary region had a rate lower than the provincial average.



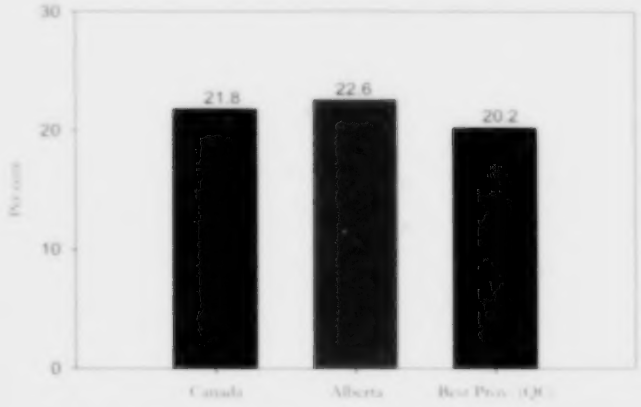


Source: Statistics Canada, Canadian Community Health Survey, 2005

Alcohol Use

People who have five or more drinks at one sitting, 12 or more times per year, are considered to be heavy drinkers, and may be at risk for problems associated with heavy alcohol consumption. According to the 2005 Canadian Community Health Survey, 22.6 per cent of Albertans who consumed alcohol in the last 12 months reported heavy drinking. The rate for Alberta is similar to the national average (21.8 per cent), and higher than the best province, Quebec (20.2 per cent).

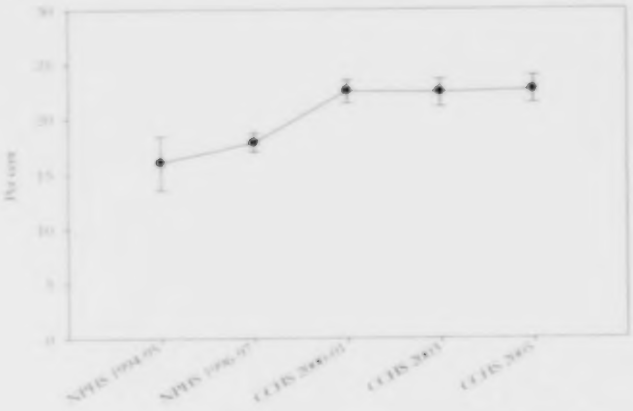
Figure 58: Heavy Drinkers, 2005 (Canada, Alberta, Best Province)



Source: Statistics Canada, Canadian Community Health Survey, 2005
(Heavy drinkers as a per cent of those who consumed alcohol in the last 12 months, aged 12 and over)

It appears that over the past decade, the proportion of heavy drinkers in Alberta has increased from 16 per cent in 1994-95 to around 22 per cent from 2000 to 2005. However, trends in heavy drinking are problematic to determine using the National Population Health Survey and Canadian Community Health Survey as the differences observed could be due to differing methods and wording of the questions across the two surveys.

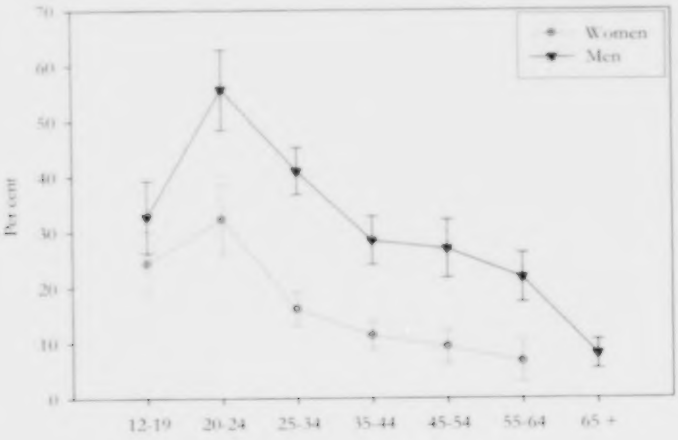
Figure 59: Trends in Heavy Drinkers in Alberta, 1994 - 2005



Source: National Population Health Survey, Canadian Community Health Survey
Heavy drinkers as a per cent of those who consumed alcohol in the last 12 months, aged 12 and over)

The highest percentage of heavy drinkers is in the 20-24 year age range. In 2005, more than half the males (55.7 per cent) and about a third of females (32.2 per cent) in this age range who had consumed alcohol in the last 12 months reported heavy drinking. The percentage of heavy drinkers decreases with increasing age for both sexes. *Note: Data for women 65 + is suppressed due to unreliability.*

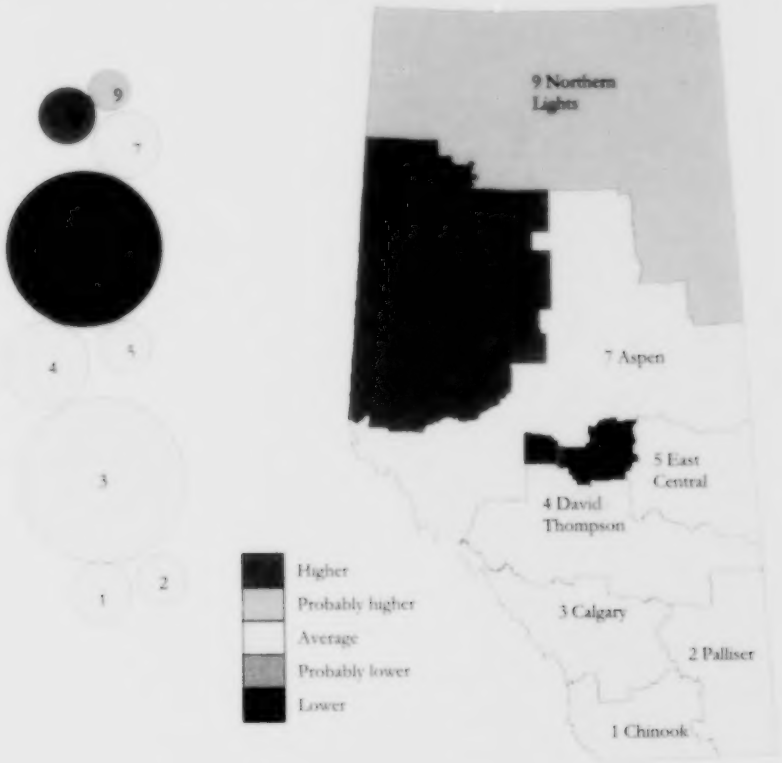
Figure 60: Age- and Sex-Specific Rates for Heavy Drinkers in Alberta, 2005

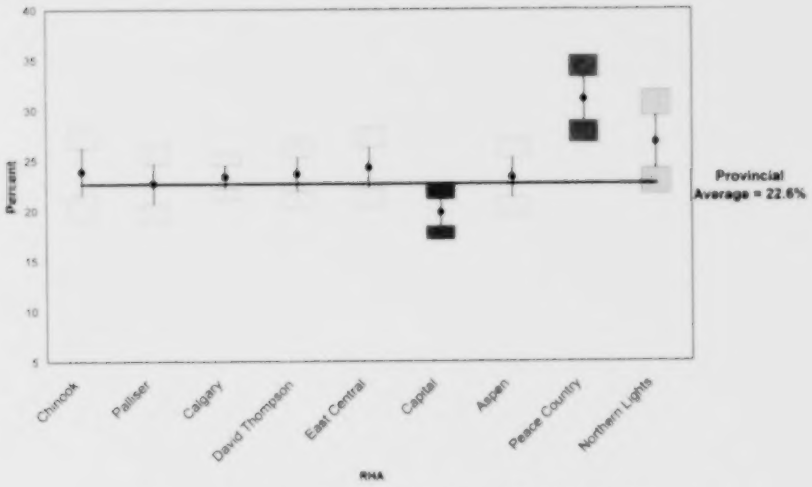


Source: Statistics Canada, Canadian Community Health Survey, 2005

Figure 61: Regional Differences for Heavy Drinkers, 2005

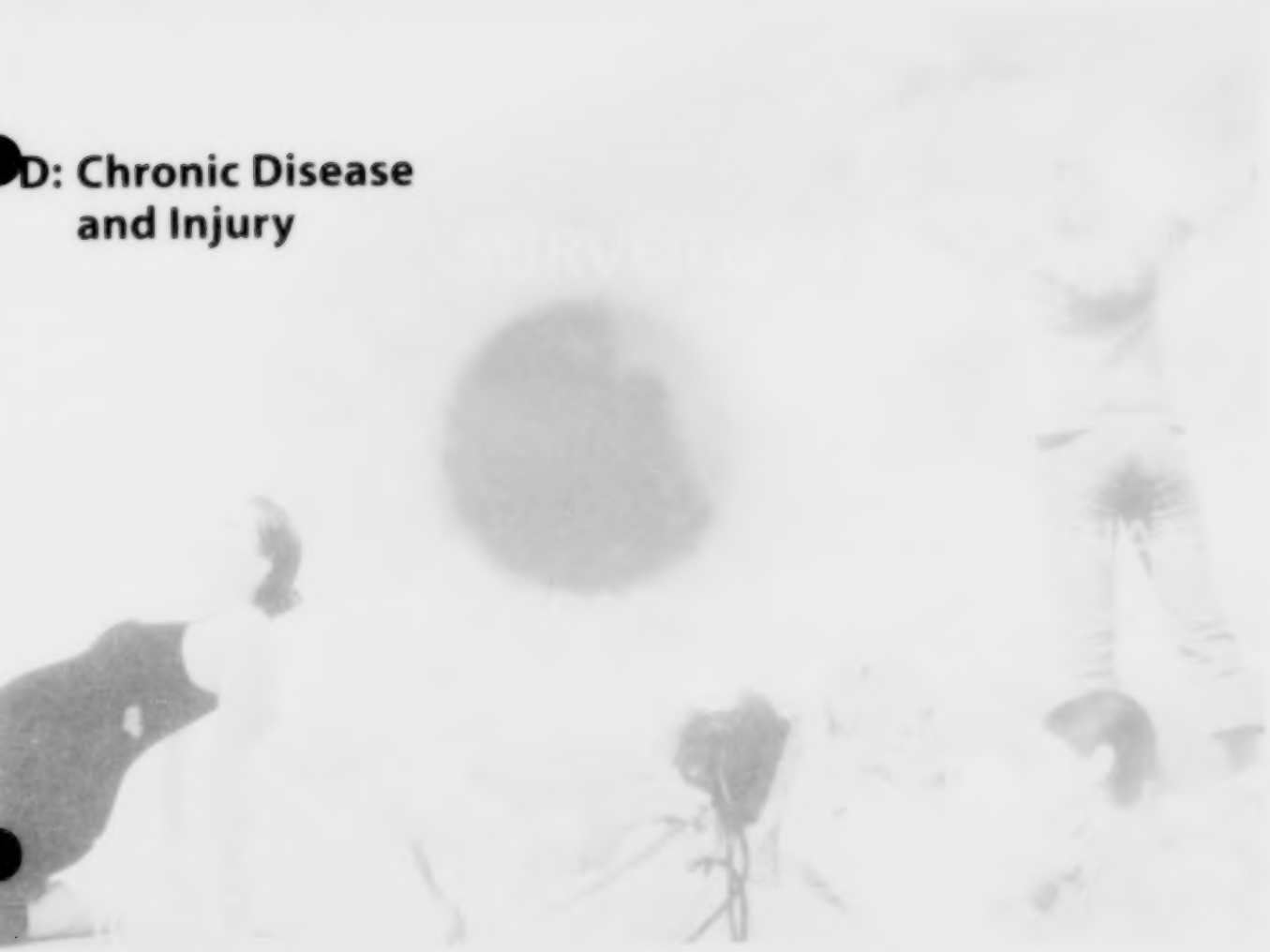
Peace Country region had a higher percentage of heavy drinkers than the provincial average in 2005. The Capital region had a rate lower than the provincial average.





Source: Statistics Canada, Canadian Community Health Survey, 2005

D: Chronic Disease and Injury



SECTION D: CHRONIC DISEASE AND INJURY

Two main sources were utilized for the data in this section.

National data come from Statistics Canada's Canadian Vital Statistics database.

Data used to report age-and-sex specific provincial mortality rates from different causes were obtained from the Alberta Vital Statistics database.

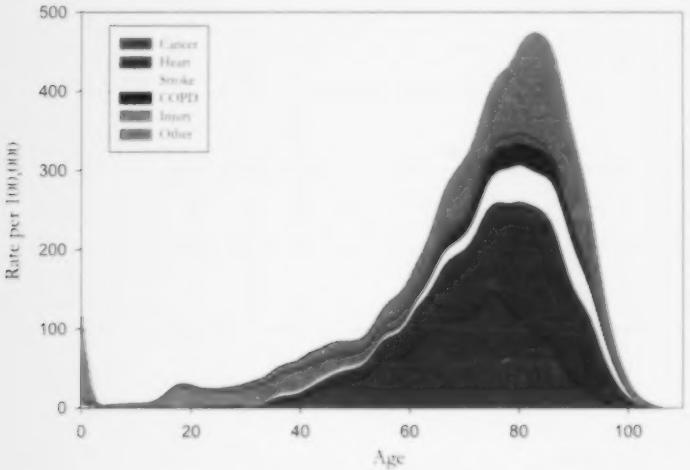
The specific database source is indicated for each graph.

Causes of Death

This section examines the various causes of death in Alberta and compares provincial data to those available for the rest of Canada. Comparisons are possible because there is a common coding system (ICD-9 and ICD-10: *International Classification of Diseases*) used by every health jurisdiction in the country, and consistently collected data is available from Statistics Canada. Thus, this section relies on Statistics Canada's Health Indicators Database when comparing Alberta with other provinces. When drawing comparisons within Alberta, the source is Alberta Vital Statistics. Figures pertaining to Alberta from a given year may vary slightly because of these two different sources.

Figure 62 illustrates the distribution of deaths in Alberta by major cause (note that COPD is an abbreviation for chronic obstructive pulmonary disease) and by age group. As can be expected, the vast majority of deaths occur in the 50-and-over age categories; however deaths due to injury begin at a much earlier age.

Figure 62: Distribution of Deaths in Alberta, 2005



Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 63 indicates how Alberta ranks in comparison with other provinces for various causes of death. While the rank is important, we must also note the actual number of deaths in Alberta to understand the impact of a particular cause.

A selection of some of the leading causes of death in each province is compared for 2004. The table shows the cause of death, number of deaths, age-standardized mortality rate per 100,000 population, and Alberta's ranking in comparison to the other provinces. The ranking is determined by first calculating the age- and sex-standardized rates of mortality by cause, and then ordering the provinces so that a rank of one indicates the province with the lowest rate of mortality, and a rank of ten indicates the highest rate of mortality. The territories were excluded from the analysis.

Figure 63: Number of Deaths by Cause and Alberta Ranking, 2004
(1 = lowest, 10 = highest rate of mortality among Canadian provinces)

Selected Causes of Death [ICD-10 code]	Number of Deaths	Rate per 100,000 population	Alberta Rank
Total, All Causes of Death [A00-Y89]	18,675	567.8	3
Kidney Disease [N00-N07, N17-N19, N25-N27]	253	7.6	2
Cancer (All Cancers) [C00-C97]	5256	164.6	2
Cancer of the Lung [C33-C34]	1277	41.1	2
Parkinson's Disease [G20-G21]	93	2.8	2
Falls [W00-W19]	120	3.6	3
Influenza and Pneumonia [J10-J18]	415	12.1	3
Tuberculosis [A16-A19]	6	0.2	3 (SK, PEI, NS had 0 mortality)
Alzheimer's Disease [G30]	341	9.7	3
Liver Disease and Cirrhosis [K70, K73-K74]	169	5.2	3
Cancer of the Colon [C18-C21]	546	17.1	4
HIV infection [B20-B24]	30	0.9	4 (tied with ON and PEI)
Major Cardiovascular Diseases [I00-I78]	6511	194.5	5
Cerebrovascular Disease [I60-I69]	1266	37.3	5
Chronic Lower Respiratory Diseases [J40-J47]	786	24.1	5
Complications of medical and surgical care [Y40-Y84, Y88]	20	0.6	5
Congenital Anomalies [Q00-Q99]	112	3.8	8
Homicide [X85-Y09, Y87.1]	79	2.5	8
Ischaemic Heart Disease [I20-I25]	3711	112	8
Motor Vehicle Collisions [V01-V99, Y85]	435	13.4	9
Suicide [X60-X84, Y87.0]	450	13.6	9

Source: Statistics Canada, Canadian Vital Statistics Database

Both the number of deaths and the ranking provide important information. For example, more Albertans died from major cardiovascular diseases than any other cause, followed by cancer (all cancers combined). The health system will need to continue to address the consequences of these diseases and their prevention.

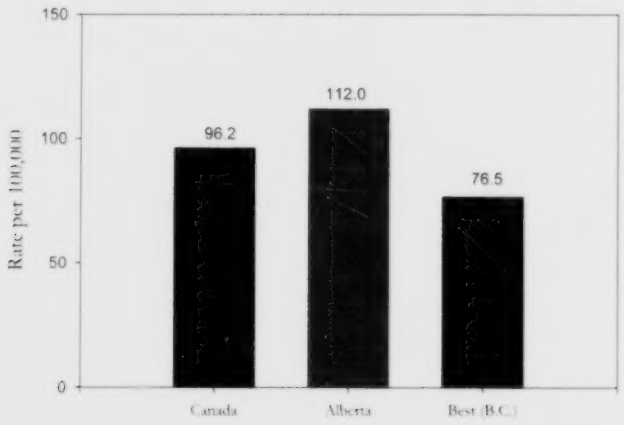
When mortality from homicide, ischaemic heart disease, motor vehicle collisions, and suicide is examined, even though there are fewer total deaths in 2004 than from cancer, Alberta is not doing as well. Alberta had the second lowest rate of cancer deaths in Canada; however it had the second and third highest rate of mortality in the country from those four causes.

Ischaemic Heart Disease

Ischaemic heart disease (or coronary artery disease) can cause angina (chest pain), heart failure, or heart attack (acute coronary thrombosis or myocardial infarction).

In Alberta (in 2004), there were 3711 deaths due to ischaemic heart disease. The age-standardized mortality rate was 112.0 per 100,000 population. This is higher than the national rate of 96.2 per 100,000, and higher than the best province, British Columbia, (76.5 per 100,000 population).

Figure 64: Mortality from Ischaemic Heart Disease, 2004 (Alberta, Canada, Best Province)

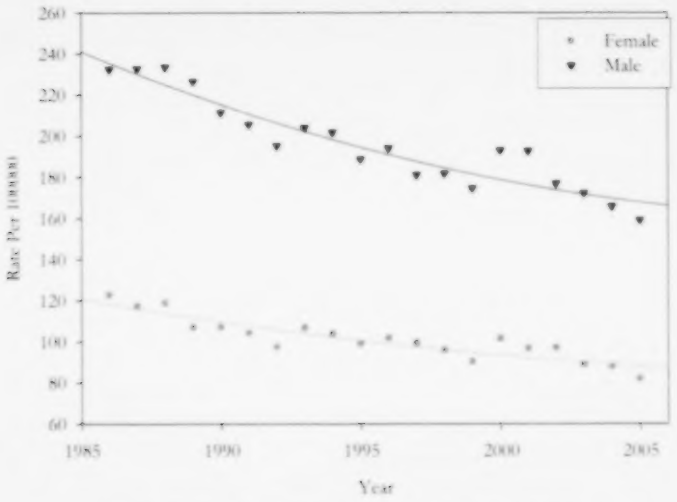


Source: Statistics Canada, Canadian Vital Statistics Database

For the past nearly two decades in Alberta, the mortality rate for ischaemic heart disease has decreased for both males and females. Mortality from ischaemic heart disease is higher in men than women.

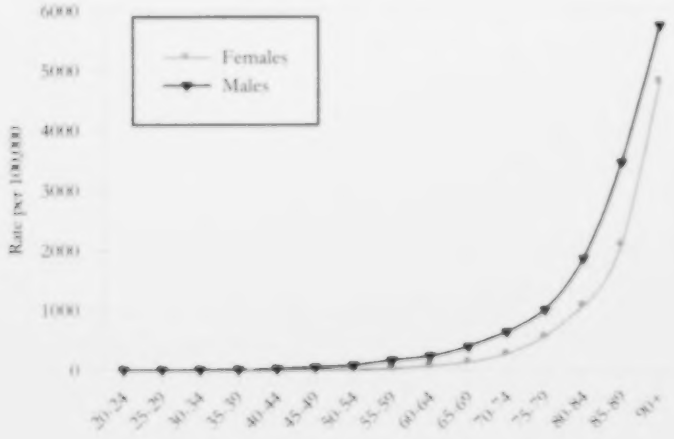
The vast majority of deaths due to ischaemic heart disease occur in Albertans 60 years and older. The decreasing trend is slightly more pronounced among males than females.

Figure 65: Mortality from Ischaemic Heart Disease in Alberta, 1986 - 2005



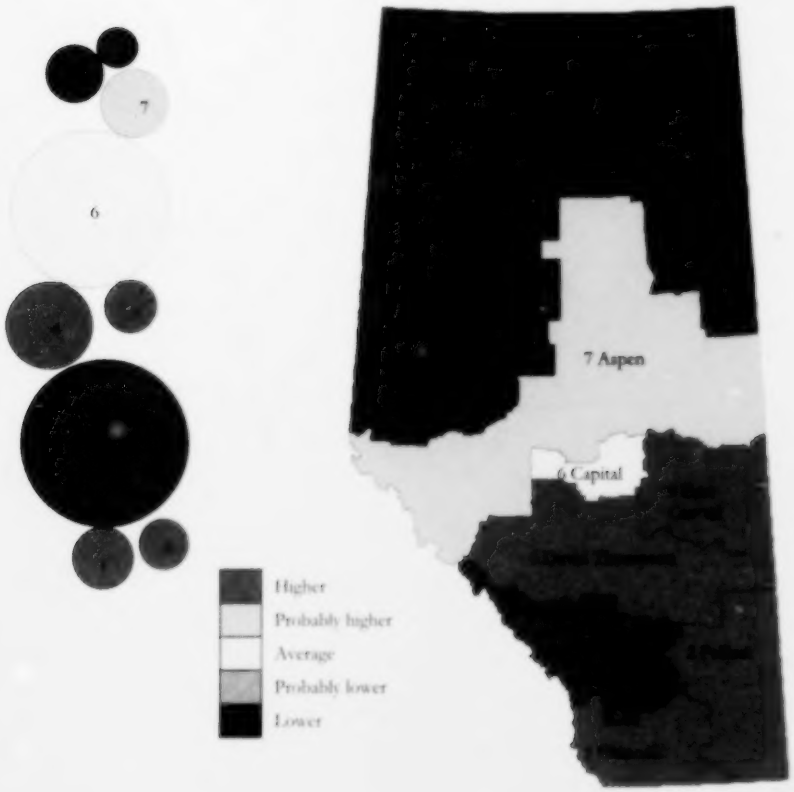
Source: Alberta Vital Statistics, Death File, October 2006 release

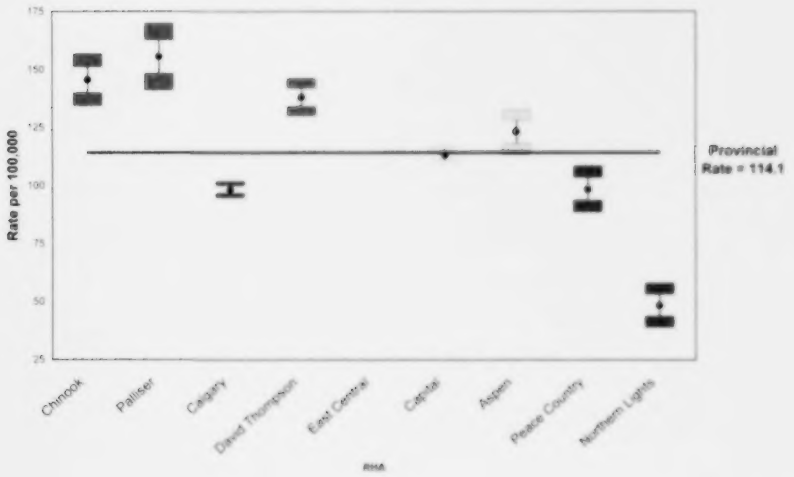
Figure 66: Age-Specific Mortality from Ischaemic Heart Disease in Alberta, 2003 – 2005



Source: Alberta Vital Statistics, Death File, October 2006 release

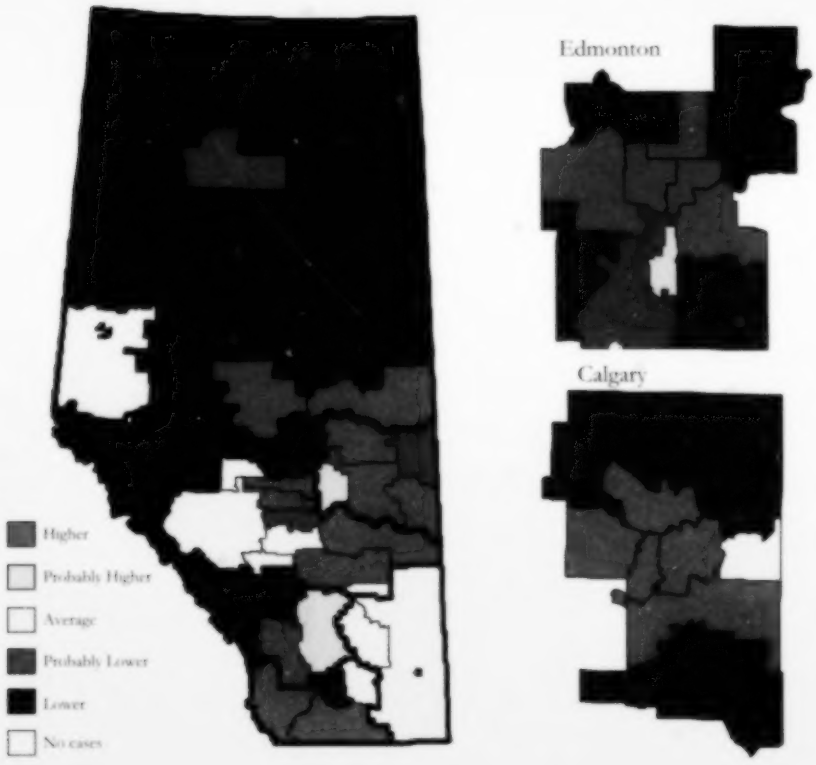
Figure 67: Regional Differences in Ischaemic Heart Disease Mortality, 2003 –05





Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 68: Sub-regional Differences in Ischaemic Heart Disease Mortality, 2003-05



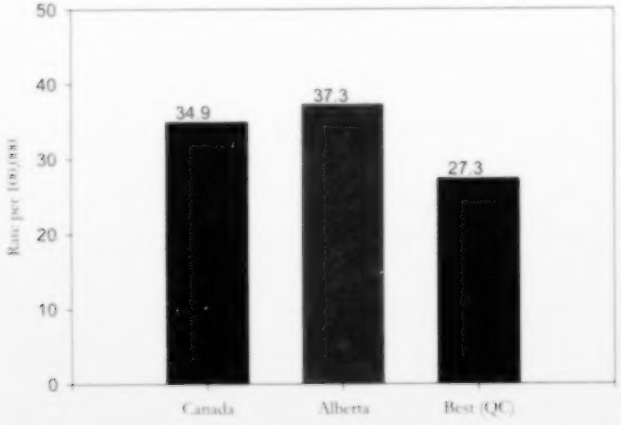
Source: Alberta Vital Statistics, Death File, October 2006 release

Stroke

Stroke (also known as cerebrovascular disease or a cerebrovascular accident) refers to the death of brain cells resulting from a lack of blood flow to the brain. Inadequate blood flow reduces the flow of oxygen and other nutrients needed for proper brain function. Major risk factors for stroke include high blood pressure, smoking, physical inactivity, atrial fibrillation, heart attack, and diabetes mellitus.

In Alberta, there were 1266 deaths due to stroke in 2004. The age-standardized mortality rate in 2004 was 37.3 per 100,000 population. This is somewhat higher than the national rate for that year, 34.9 per 100,000. Quebec, at 27.3 per 100,000, had the lowest rate in Canada.

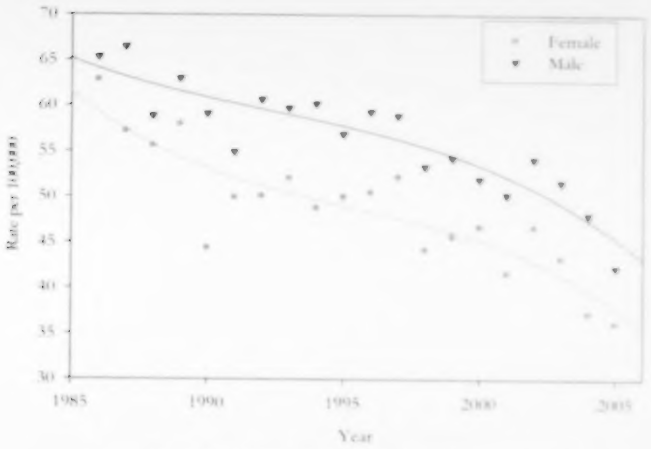
Figure 69: Mortality from Stroke, 2004 (Alberta, Canada, Best Province)



Source: Statistics Canada, Canadian Vital Statistics Database

A greater proportion of men die from stroke than women in Alberta. Over the past two decades, the mortality rate for stroke has gradually declined for both men and women.

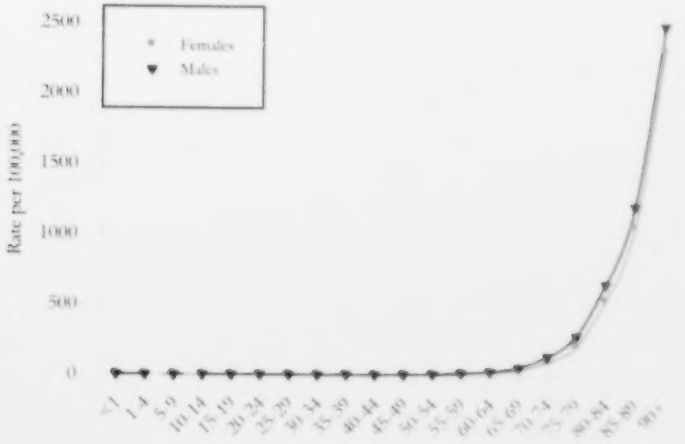
Figure 70: Mortality from Stroke in Alberta, 1986 - 2005



Source: Alberta Vital Statistics, Death File, October 2006 release

The pattern of mortality from stroke is similar for men and women. Mortality from stroke is low across the lifespan until after the seventh decade of life where it increases dramatically.

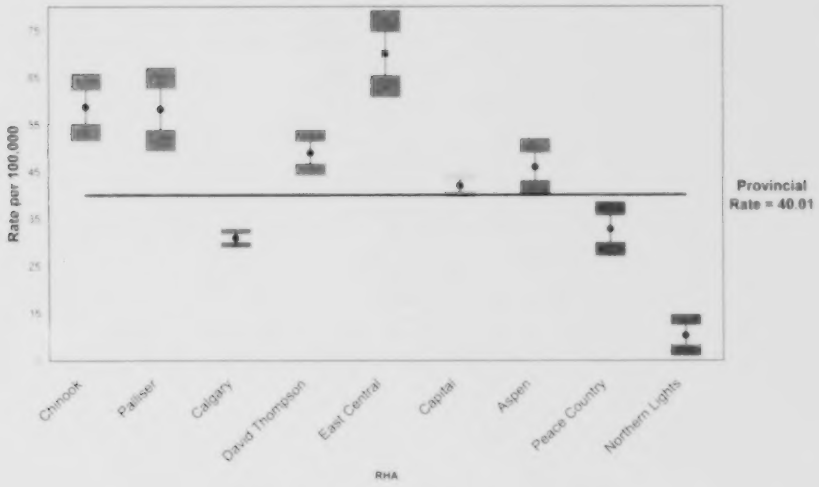
Figure 71: Age-Specific Mortality from Stroke in Alberta, 2003 - 2005



Source: Alberta Vital Statistics, Death File, October 2006 release

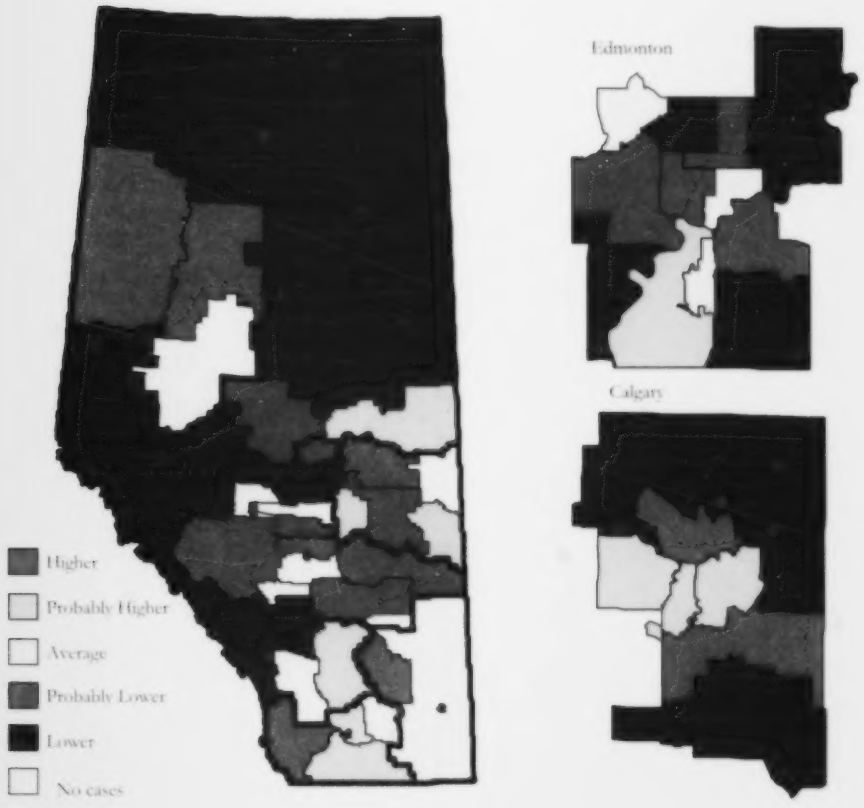
Figure 72: Regional Differences in Stroke Mortality Rates, 2003 – 05





Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 73: Sub-regional Differences in Stroke Mortality Rates, 2003-05

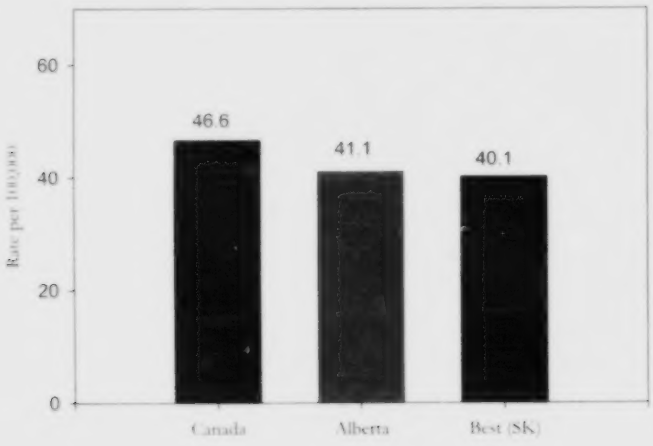


Source: Alberta Vital Statistics, Death File, October 2006 release.

Lung Cancer

Lung cancers are the leading cause of death among all cancers in Alberta. In 2004, there were 1277 deaths due to lung cancer in Alberta. Alberta's age-standardized mortality rate for lung cancer was the second lowest in Canada at 41.1 per 100,000 (Saskatchewan had the lowest rate at 40.1). The national rate was 46.6.

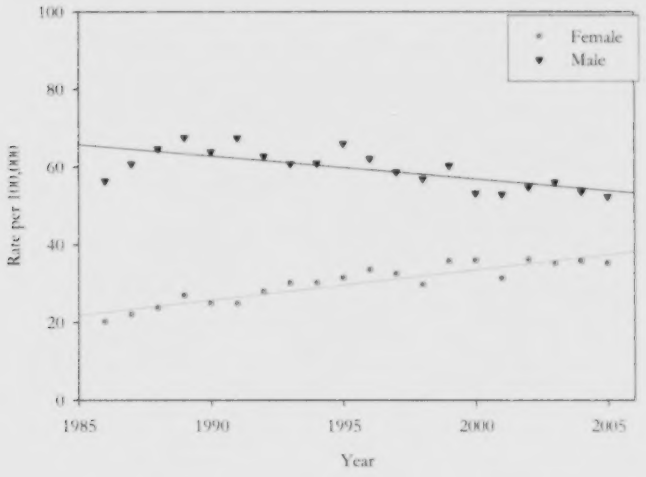
Figure 74: Mortality Rates for Lung Cancer, 2004 (Alberta, Canada, Best Province)



Source: Statistics Canada, Canadian Vital Statistics Database

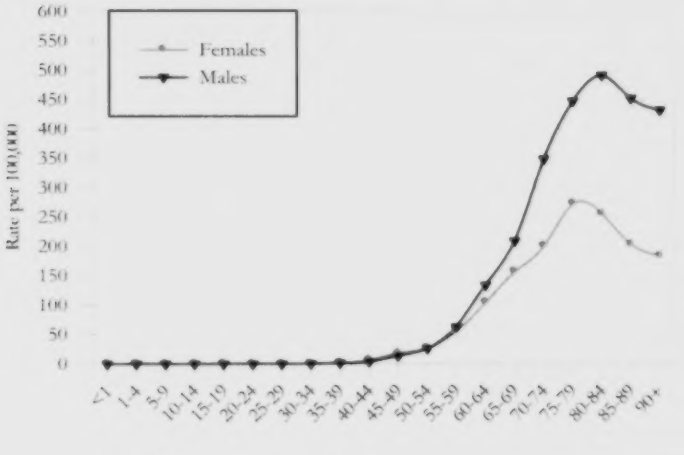
While there has been a marked difference between male and female mortality from lung cancer in the past, the gap has narrowed -- the rate for men has slightly decreased while it has increased for women. This trend may be related to changing smoking patterns in the population. The mortality rate from lung cancer in women now surpasses that of breast cancer. Most deaths from lung cancer occur in men and women over 55 years of age.

Figure 75: Mortality Rates for Lung Cancer in Alberta, 1986 - 2005



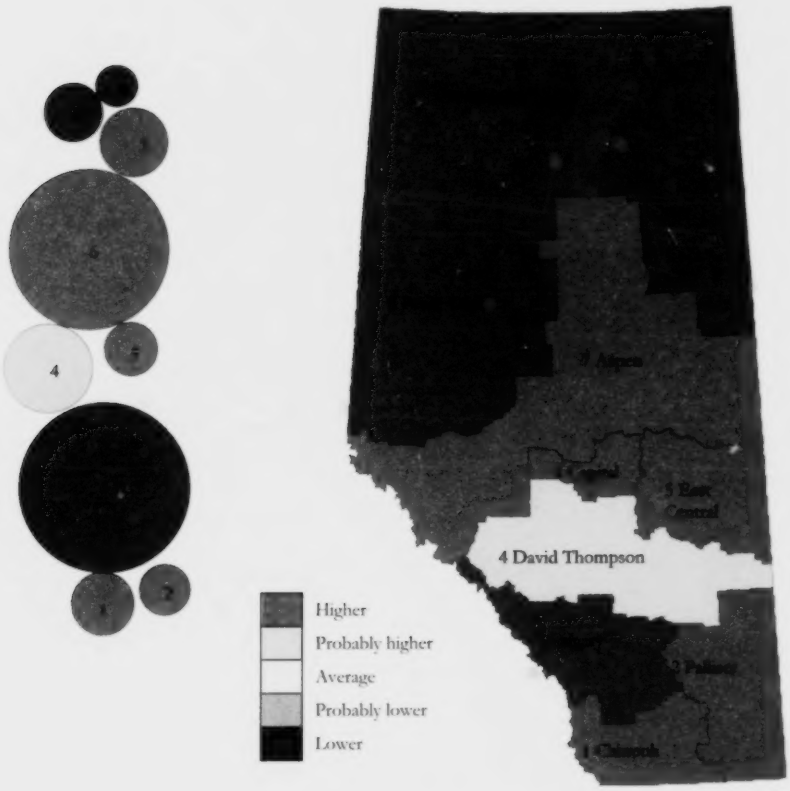
Source: Alberta Vital Statistics, Death File, October 2006 release

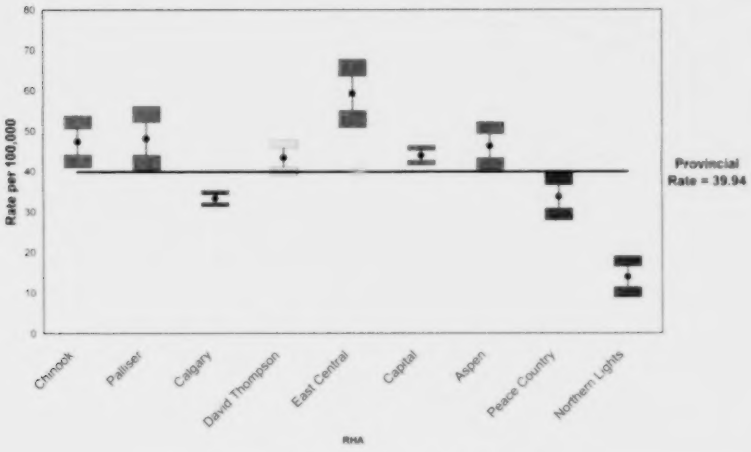
Figure 76: Age-Specific Death Rates for Lung Cancer in Alberta, 2003 - 2005



Source: Alberta Vital Statistics, Death File, October 2006 release

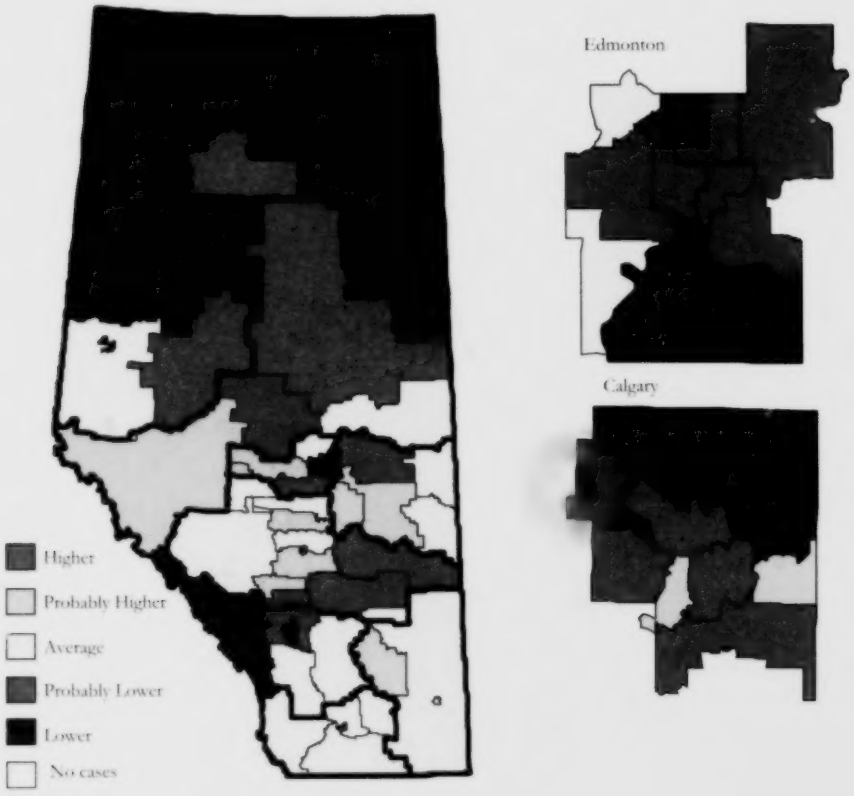
Figure 77: Regional Differences in Lung Cancer Mortality Rates, 2003-05





Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 78: Sub-Regional Differences in Lung Cancer Mortality Rates, 2003–05

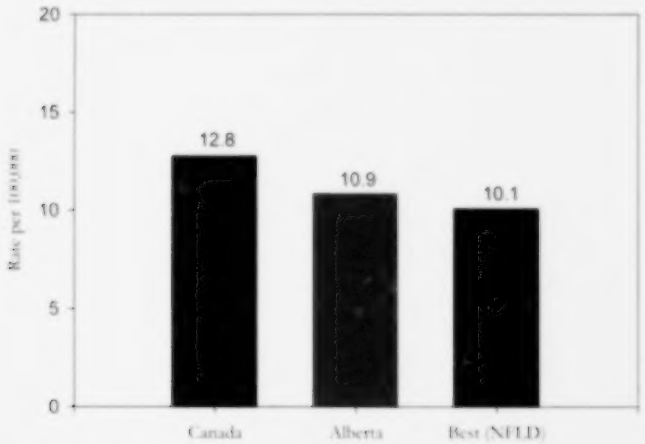


Source: Alberta Vital Statistics, Death File, October 2006 release

Breast Cancer

Breast cancer is no longer the leading cause of cancer deaths in women; however it is still a significant cause of mortality. In Alberta, there were 361 deaths due to breast cancer in 2004. The Alberta age-standardized mortality rate for breast cancer was 10.9 per 100,000; slightly lower than the national rate of 12.8. Newfoundland and Labrador, with a rate of 10.1 per 100,000, had the lowest rate of breast cancer mortality across the provinces in 2004.

Figure 79: Mortality Rates for Female Breast Cancer, 2004 (Alberta, Canada, Best Province)



Source: Statistics Canada, Canadian Vital Statistics Database
Note: Statistics Canada standardizes the weight of both sexes together

Over the past nearly two decades, the overall mortality rate for breast cancer for women in Alberta has followed a decreasing trend.

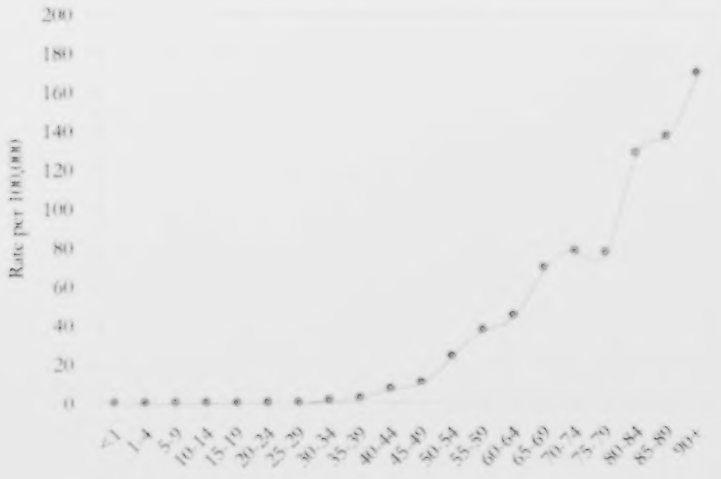
In regards to age specific mortality, rates begin increasing around the fourth decade of life, and increase quite dramatically with increasing age.

Figure 80: Mortality Rates for Breast Cancer in Alberta, 1986 - 2005



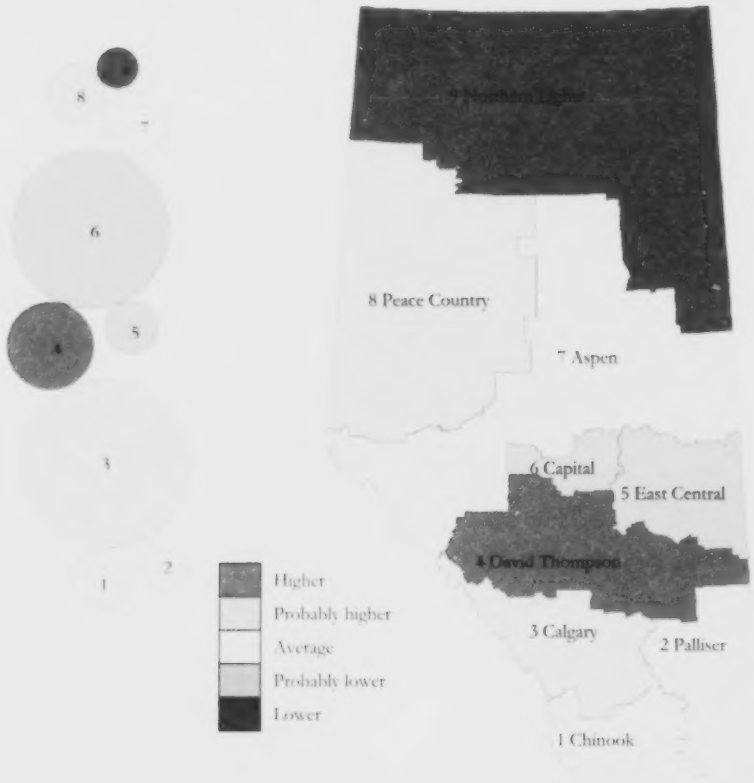
Source: Alberta Vital Statistics, Death File, October 2006 release

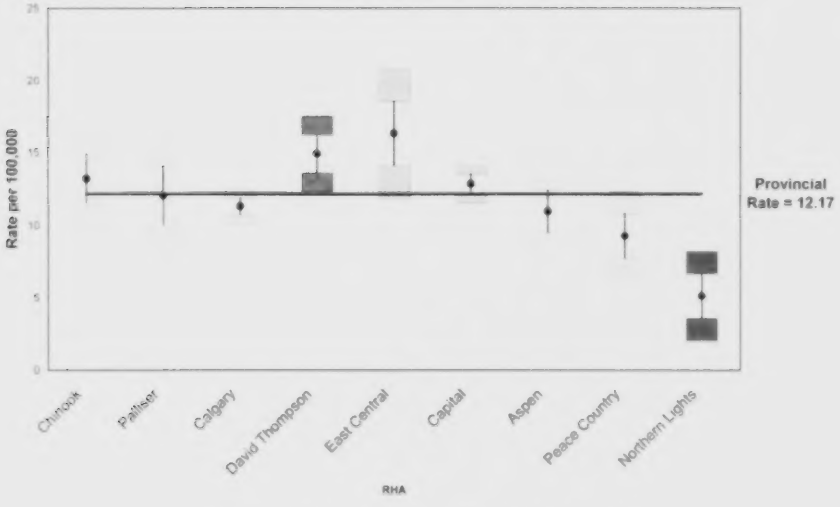
Figure 81: Age Specific Death Rates for Breast Cancer in Alberta, 2003 - 2005



Source: Alberta Vital Statistics, Death File, October 2006 release

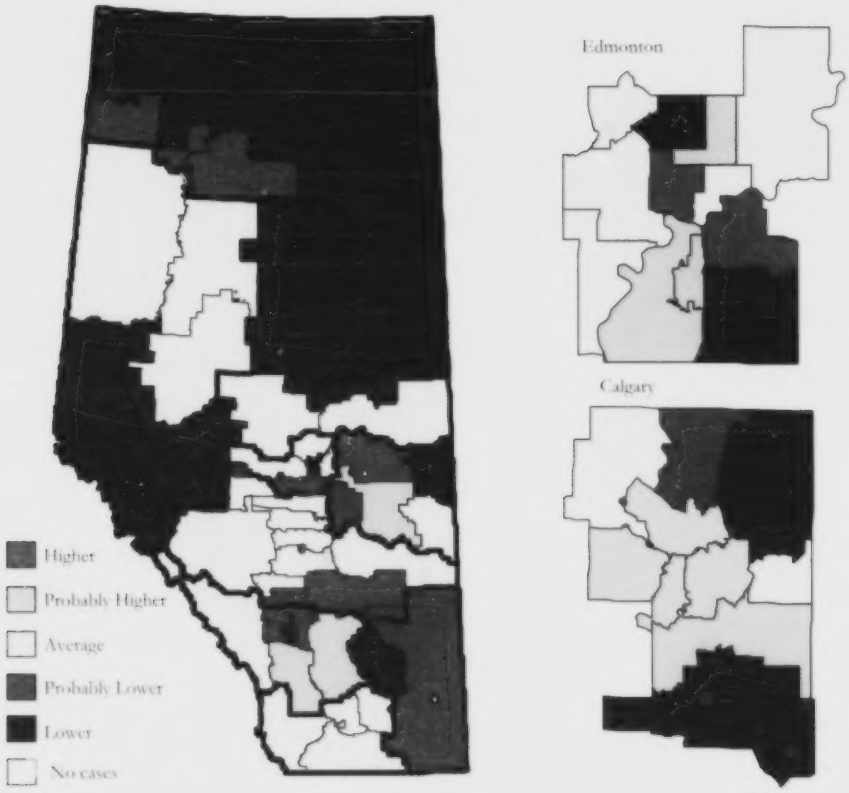
Figure 82: Regional Differences in Breast Cancer Mortality Rates, 2003-05





Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 83: Sub-Regional Differences in Breast Cancer Mortality Rates, 2003–05

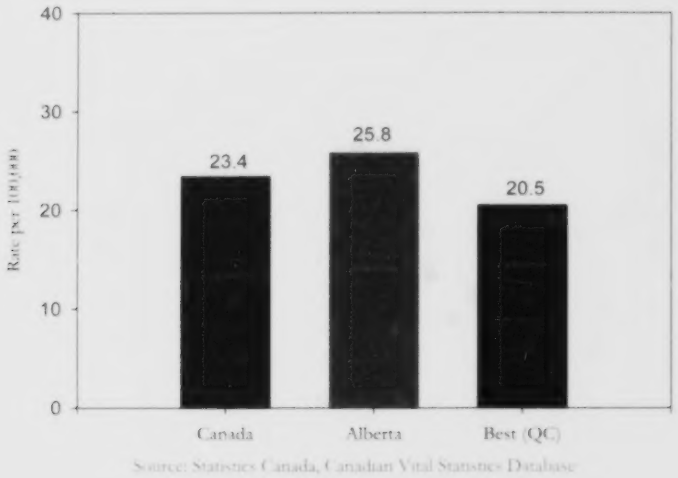


Source: Alberta Vital Statistics, Death File, October 2006 release.

Prostate Cancer

Prostate cancer is the most frequently occurring tumor in males. It is most commonly found in older men. In Alberta in 2004, there were 334 deaths due to prostate cancer. The age-standardized mortality rate in Alberta was 25.8 per 100,000. Alberta's rate is higher than the Canadian average of 23.4 and the rate of the best province, Quebec (20.5).

Figure 84: Mortality Rates for Prostate Cancer, 2004 (Alberta, Canada, Best Province)

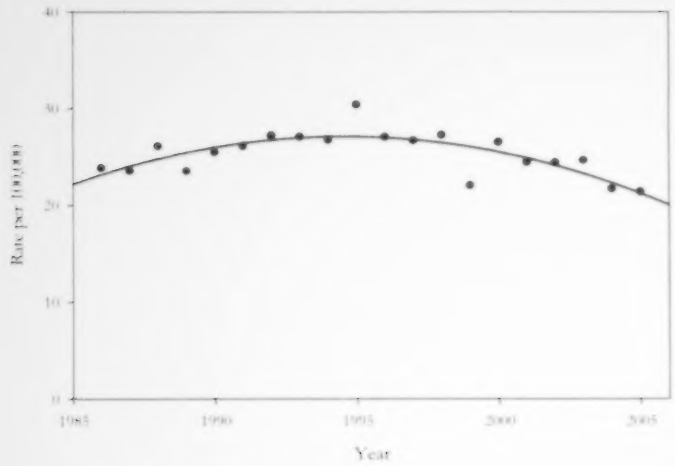


Source: Statistics Canada, Canadian Vital Statistics Database

Over the past 20 years, the mortality rate for prostate cancer for men in Alberta has remained fairly stable. Prostate cancer is highly treatable if caught early making screening important.

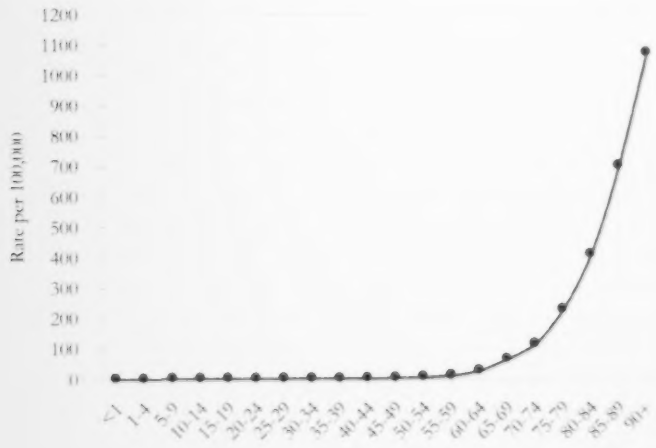
Prostate cancer generally causes mortality in later life with mortality rates dramatically increasing around the seventh decade of life.

Figure 85: Mortality Rates for Prostate Cancer in Alberta, 1986 - 2005



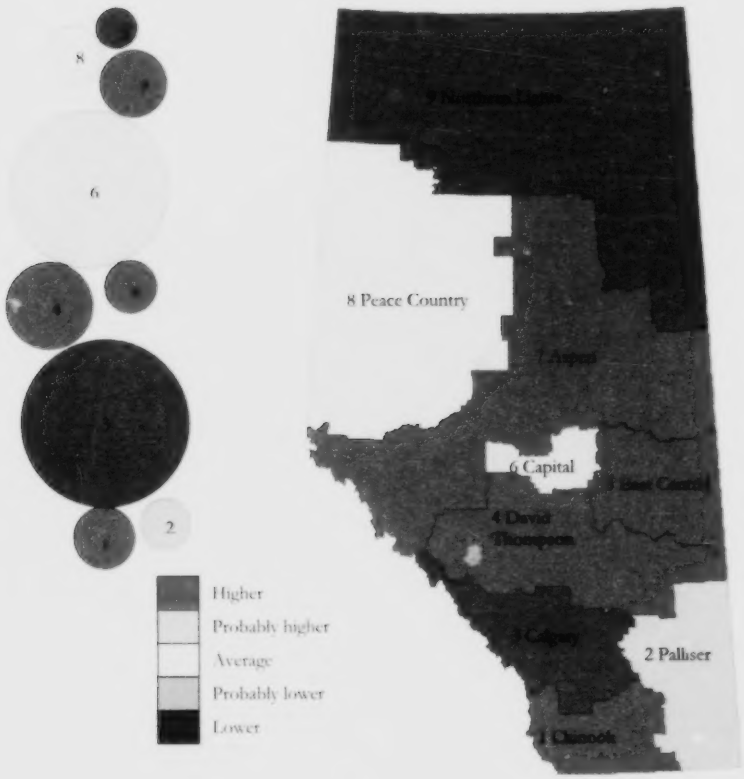
Source: Alberta Vital Statistics, Death File, October 2006 release

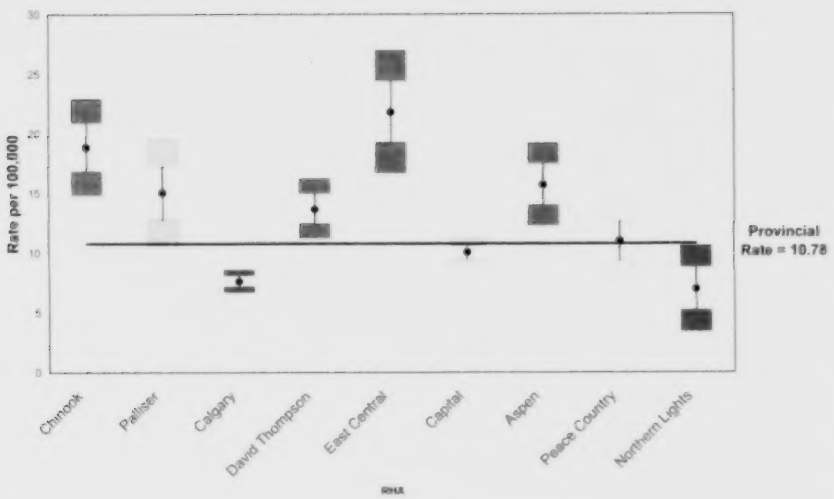
Figure 86: Age Specific Death Rates for Prostate Cancer in Alberta, 2003 - 2005



Source: Alberta Vital Statistics, Death File, October 2006 release

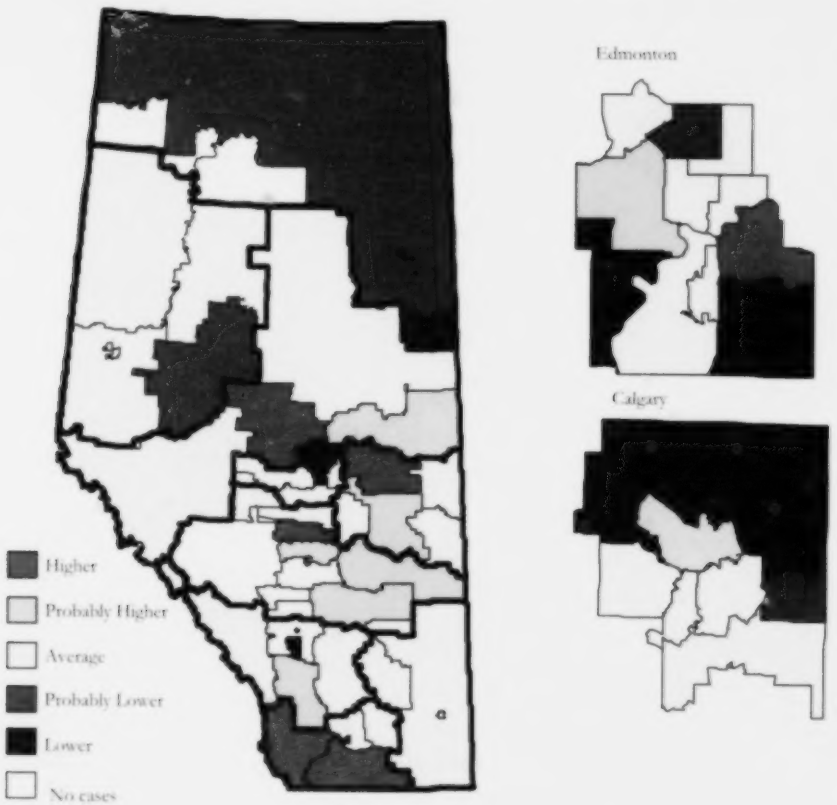
Figure 87: Regional Differences in Prostate Cancer Mortality Rates, 2003-05





Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 88: Sub-Regional Differences in Prostate Cancer Mortality Rates, 2003-05

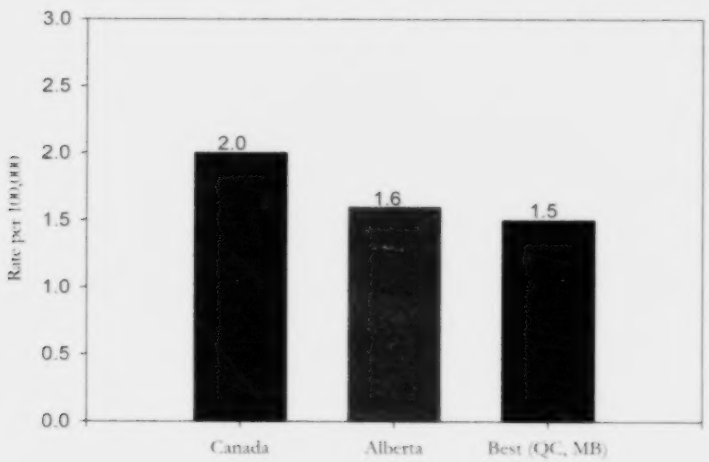


Source: Alberta Vital Statistics, Death File, October 2006 release

Cervical Cancer

Considering that mortality from invasive cancers of the cervix is largely preventable through early detection and treatment, the mortality rate from cervical cancer is unacceptably high. In 2004 in Alberta there were 31 deaths due to cervical cancer. The age-standardized mortality rate for Alberta was 1.6 per 100,000. This is lower than the Canadian rate of 2.0. Manitoba and Quebec were tied with the lowest rate of 1.5 per 100,000.

Figure 89: Mortality Rates for Cervical Cancer, 2004 (Alberta, Canada, Best Province)



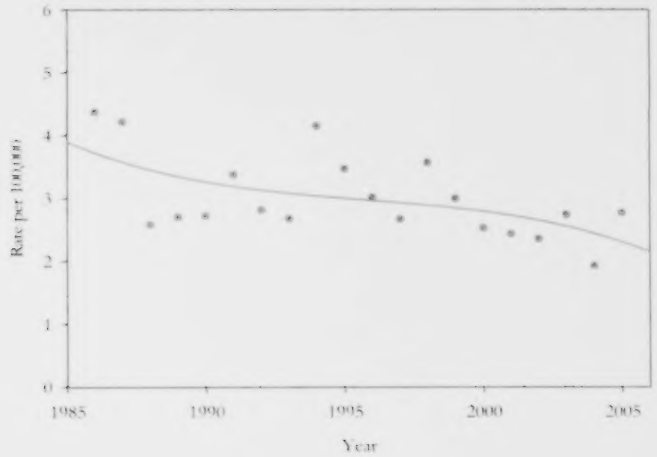
Source: Statistics Canada, Canadian Vital Statistics Database

Over the past nearly two decades, despite large year-to-year fluctuations, the mortality rate for cervical cancer for women in Alberta has followed a decreasing trend.

Across the life span cervical cancer begins to cause mortality in women around their mid thirties and gradually increases until the 8th decade of life after which it follows a more dramatic increase.

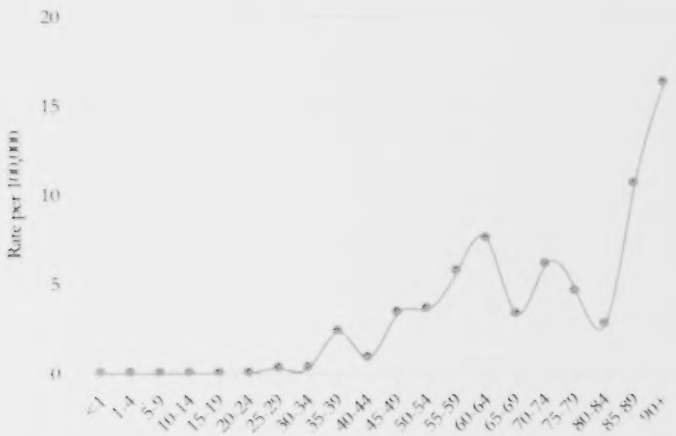
The provincial map shows little variation between the regions, however Peace Country region had a lower rate than the provincial average, and Northern Lights region had zero mortality from cervical cancer. Provincial rates are so low that sub-regional comparisons are unstable and have not been shown in a map.

Figure 90: Mortality Rates for Cervical Cancer in Alberta, 1986 - 2005



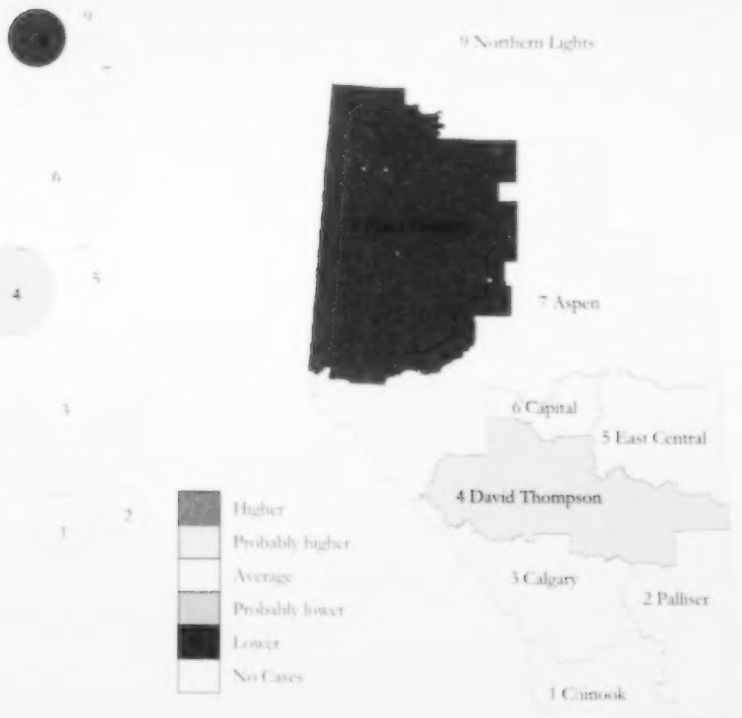
Source: Alberta Vital Statistics, Death File, October 2006 release

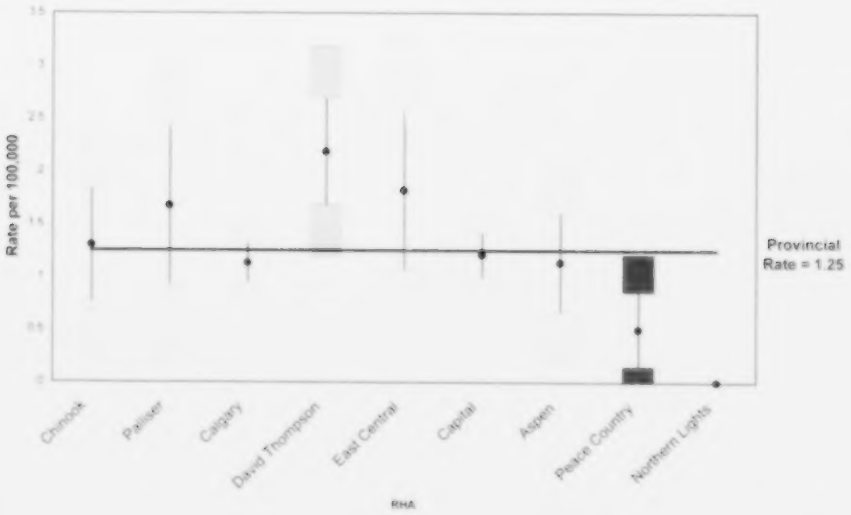
Figure 91: Age Specific Death Rates for Cervical Cancer in Alberta, 2003 - 2005



Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 92: Regional Differences in Cervical Cancer Mortality Rates, 2003-05



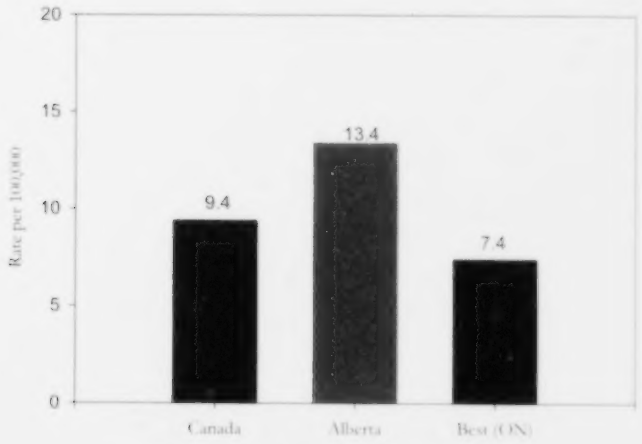


Source: Alberta Vital Statistics, Death File, October 2006 release

Motor Vehicle Collisions

In Alberta there were 435 deaths due to motor vehicle collisions in 2004. The age-standardized rate of deaths due to injuries from motor vehicle collisions was 13.4 per 100,000 in Alberta in 2004. The national average for that year was 9.4. Alberta's rate ranks second highest out of the provinces, and almost double Ontario who had the lowest rate in Canada (7.4 per 100,000).

Figure 93: Mortality Rates from Motor Vehicle Collisions, 2004
(Alberta, Canada, Best Province)



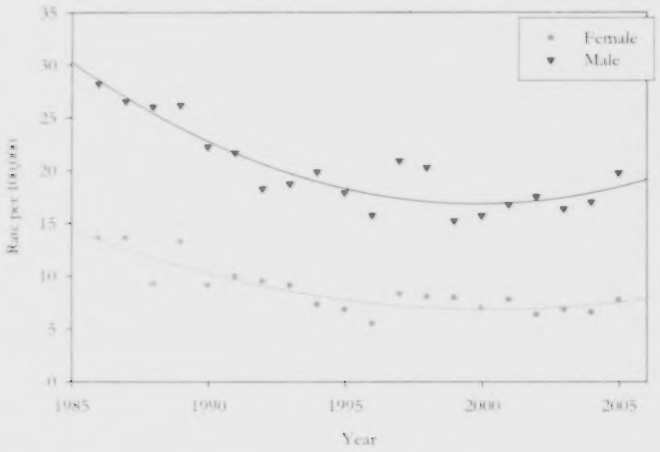
Source: Statistics Canada, Canadian Vital Statistics Database

In Alberta, male and female mortality rates due to motor vehicle collisions have decreased since 1986, however they now appear to be rising again.

Most motor vehicle collision deaths involve teenage and young adult females and males and higher mortality rates are seen in rural regions of Alberta. Seatbelt legislation in Alberta has increased the use of seatbelts by drivers and has, in turn, resulted in decreased numbers of deaths. Still, there is concern that Alberta's rates are beginning to increase again. There is also a concern that while motor vehicle collision-related mortality is decreasing, there may be increases in morbidity.

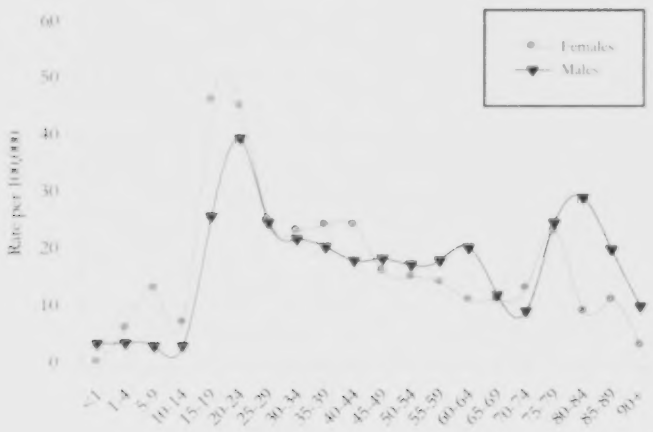
Alcohol is a well-documented risk factor for motor vehicle collisions; in many cases, however, alcohol is not involved. Initiatives such as the Alberta Motor Association's "Mission Possible" are alerting the public to the number of collisions that occur in Alberta.

Figure 94: Mortality Rates for Injury in Motor Vehicle Collisions in Alberta, 1986 - 2005



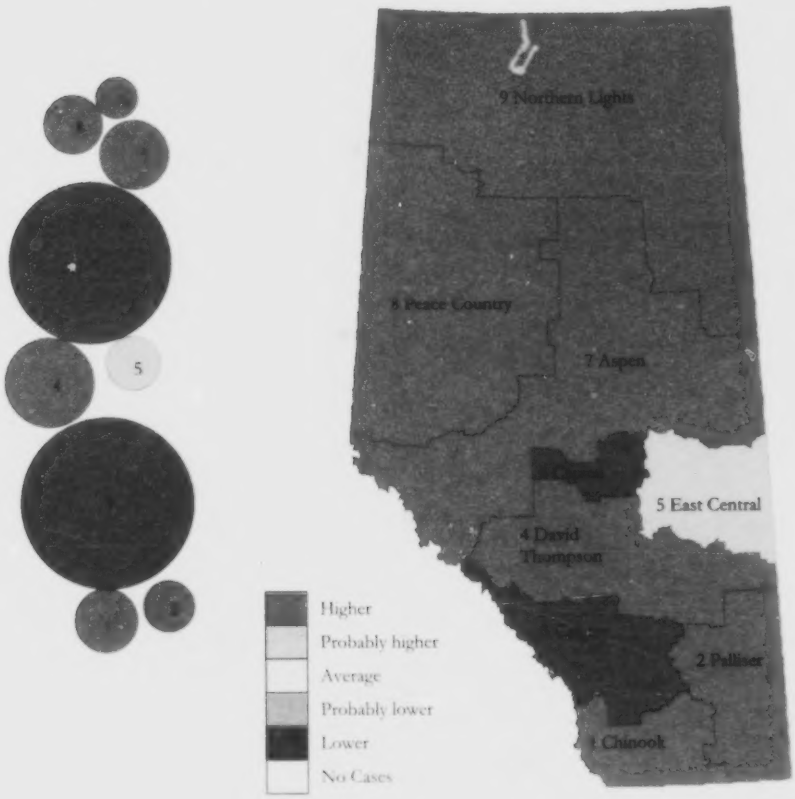
Source: Alberta Vital Statistics, Death File

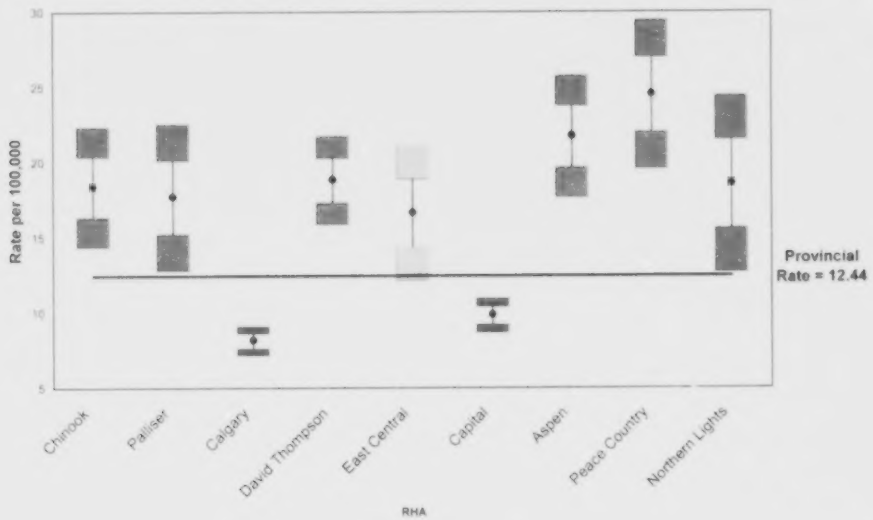
Figure 95: Age-Specific Mortality Rates for Motor Vehicle Collisions in Alberta, 2003-05



Source: Alberta Vital Statistics, Death File

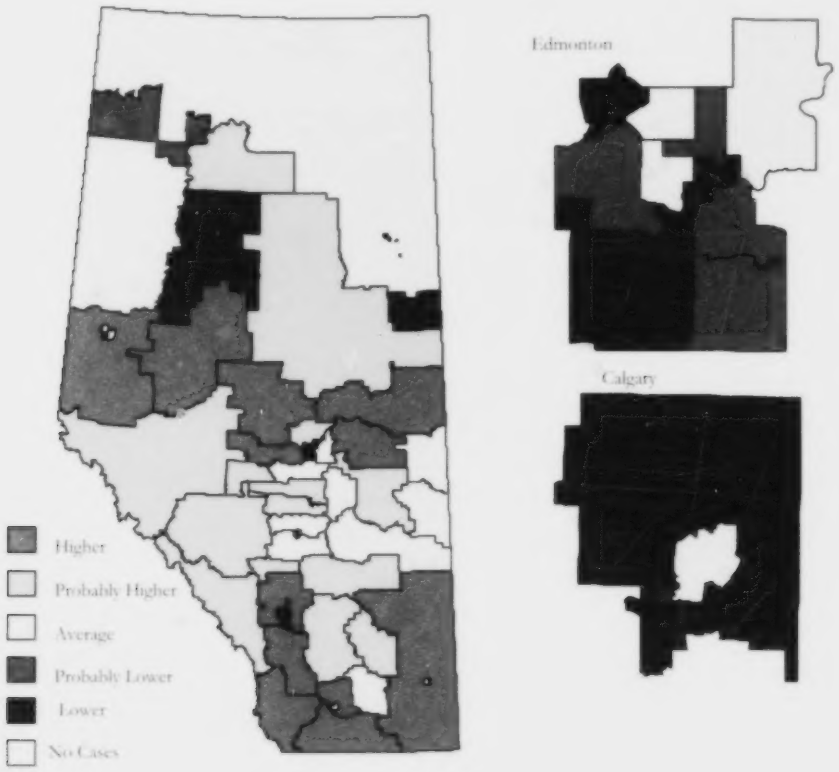
Figure 96: Regional Differences in Motor Vehicle Collision Mortality Rates, 2003-05





Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 97: Sub-Regional Differences in Motor Vehicle Collision Mortality Rates, 2003 – 05

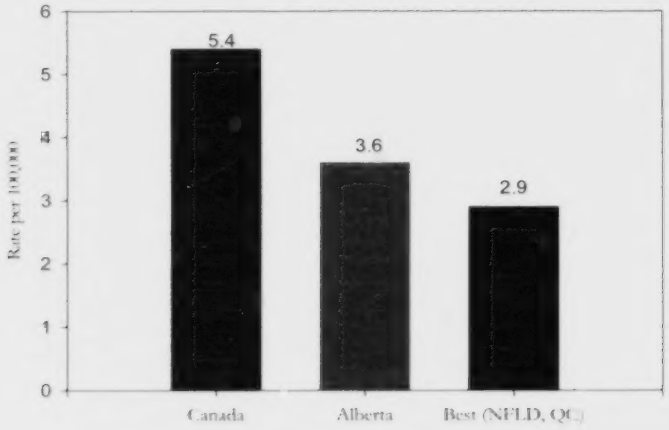


Source: Alberta Vital Statistics, Death File, October 2006 release

Falls

Falls are classified in three types: anticipated physiological; unanticipated physiological; and accidental. Most deaths due to falls occur in old age. In 2004, there were 120 deaths due to falls in Alberta. The age-standardized rate of deaths due to falls in Alberta was 3.6 per 100,000, lower than the national average (5.4 per 100,000). Newfoundland and Labrador and Quebec were tied with the lowest rate in Canada at 2.9.

Figure 98: Mortality Rates from Falls, 2004 (Alberta, Canada, Best Province)



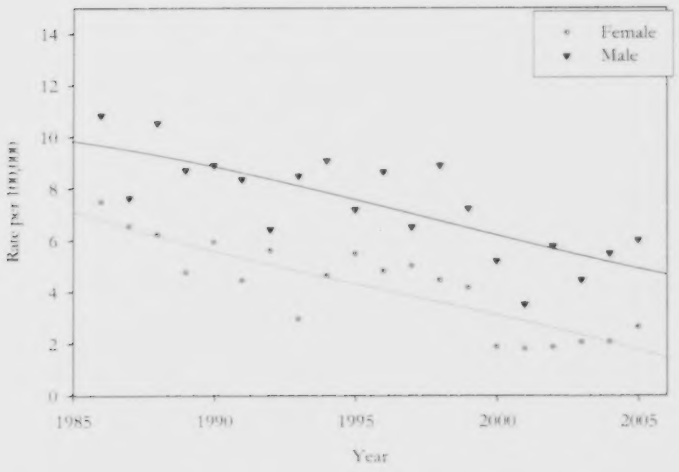
Source: Statistics Canada, Canadian Vital Statistics Database

Between 1986 and 2005, male and female mortality rates for deaths due to falls decreased in Alberta. The mortality rate for females is lower than for males.

One prevention strategy involves the Morse Fall Scale, a quick and simple method of assessing patients to determine their likelihood of falling. Approximately three-quarters of all falls occur with patients who have been identified by the Morse Fall Scale as "at risk of falling." Coordination of environmental safety, monitoring systems, and staff preparation in health care facilities will contribute to effective fall prevention programs.

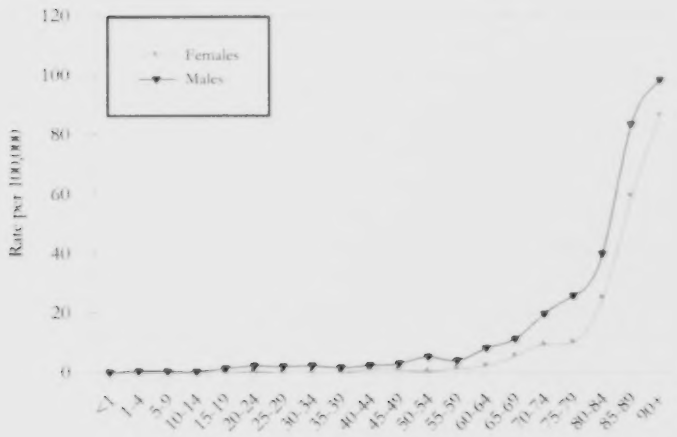
In younger age groups, many deaths from falls are work related. Prevention strategies involve emphasizing proper operation of farm equipment, ladder safety, and use of safety equipment (e.g., footwear, harness, ropes). Workers need to consider the "fall potential" of situations and take proper measures to reduce risks.

Figure 99: Mortality from Falls in Alberta, 1986 - 2005



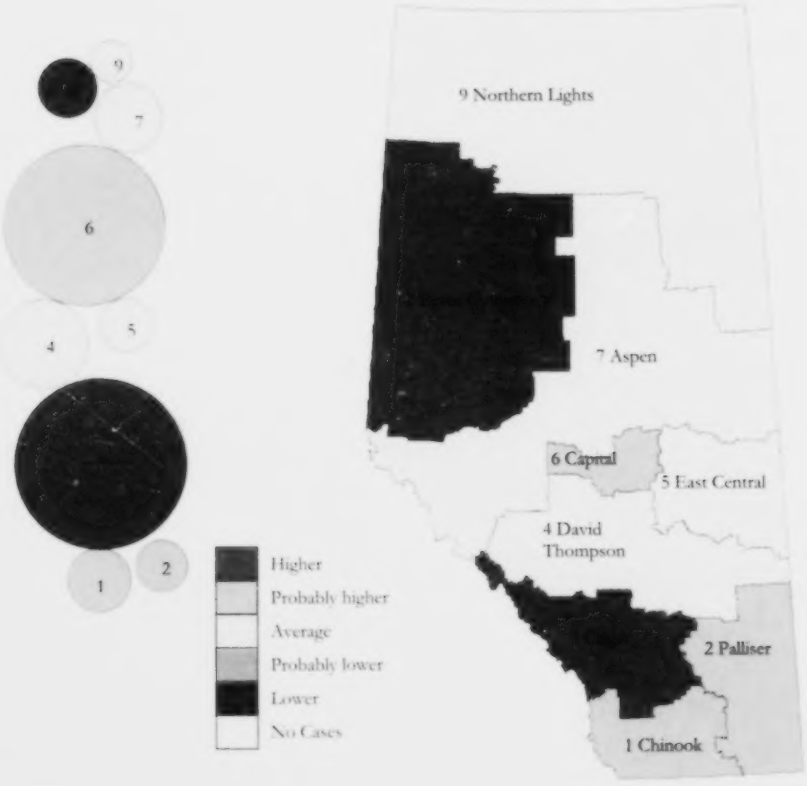
Source: Alberta Vital Statistics, Death File, October 2006 release

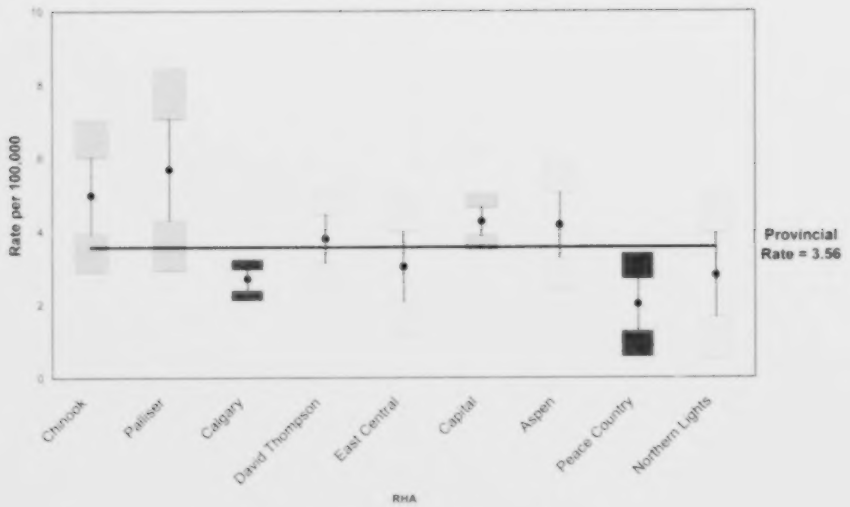
Figure 100: Age Specific Mortality from Falls in Alberta, 2003-05



Source: Alberta Vital Statistics, Death File

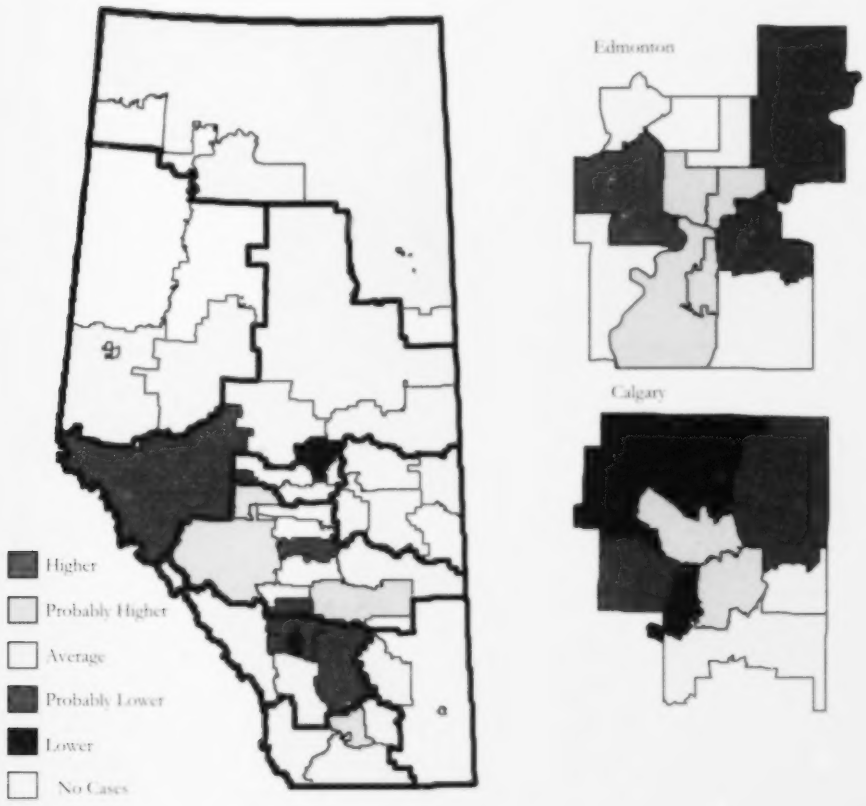
Figure 101: Regional Differences in Mortality Rates from Falls, 2003 - 05





Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 102: Sub-Regional Differences in Mortality Rates from Falls, 2003 – 05

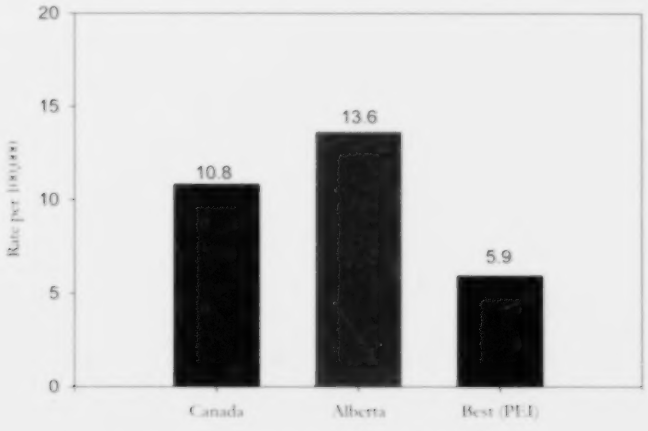


Source: Alberta Vital Statistics, Death File, October 2006 release

Suicide

The rate of suicide in Alberta is unacceptably high. In Alberta there were 450 deaths due to suicide in 2004. As a comparison, there were more deaths from suicide than from motor vehicle accidents in Alberta in 2004. The provincial age-standardized rate of deaths due to suicide was 13.6 per 100,000. The national average for that year was 10.8 per 100,000. Alberta's rate is the second highest across the provinces and far higher than that of the best province, Prince Edward Island (5.9 per 100,000).

Figure 103: Mortality from Suicide, 2004 (Alberta, Canada, Best Province)



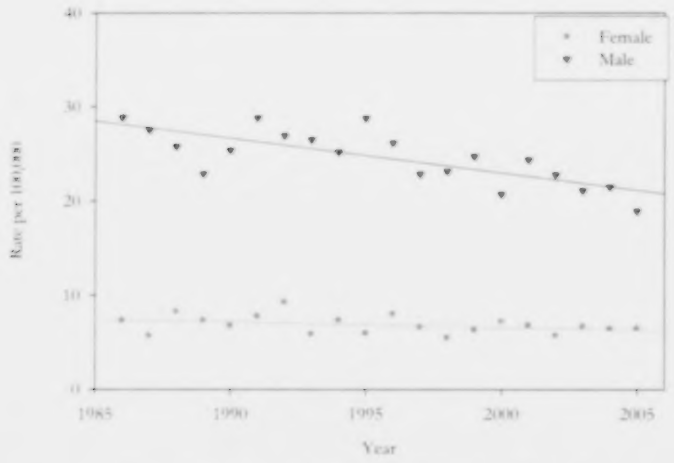
Source: Statistics Canada, Canadian Vital Statistics Database

In Alberta, male and female mortality rates for deaths due to suicide remained fairly constant over the last nearly two decades. There has been a gradual decreasing trend for males that is less apparent in females.

Most suicide deaths involve middle and senior aged males. However, attempted suicide (parasuicide) is more evenly distributed between the sexes. It has been suggested that males are more likely to die because they use more violent methods (e.g., firearms, hanging, falls). Females usually attempt suicide by methods such as poisoning and are often saved.

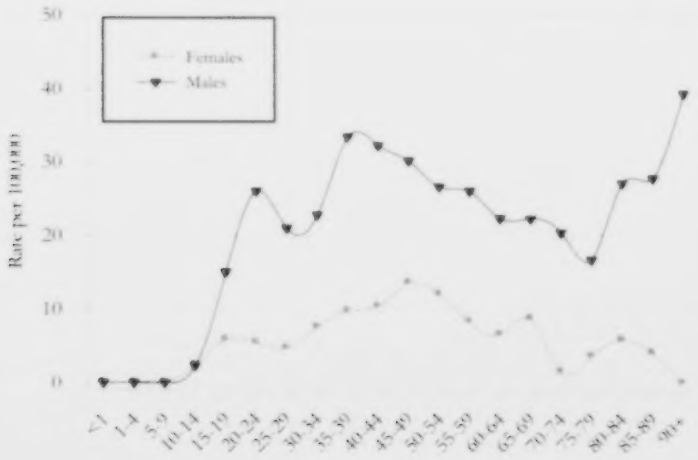
The sex and age patterns of suicide rates parallel the onset and prevalence of certain mental disorders particularly in youth, making suicide a major ongoing concern for professionals in mental health.

Figure 104: Mortality from Suicide in Alberta, 1985 - 2005



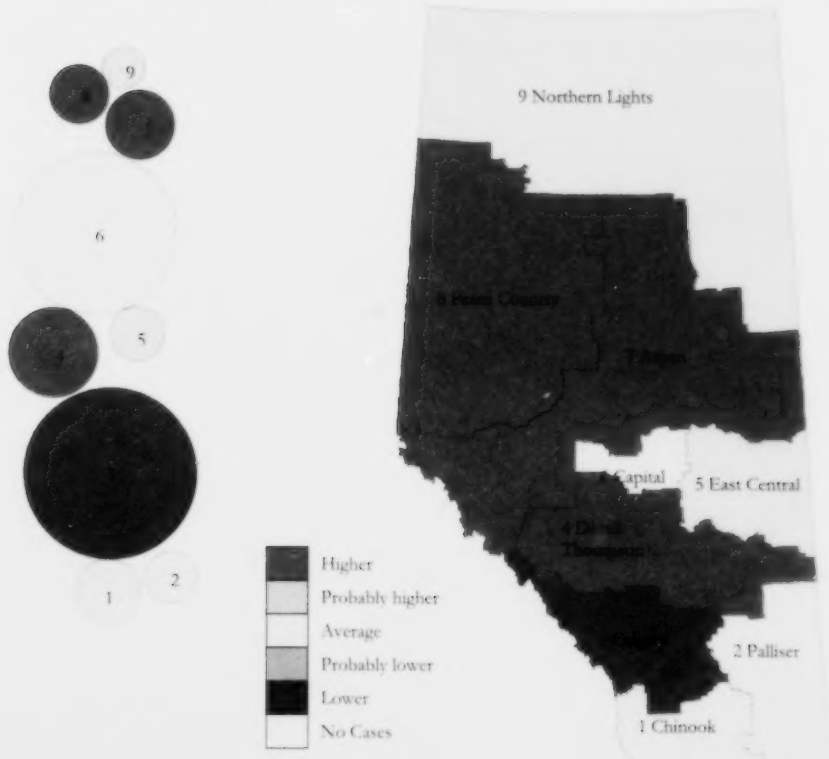
Source: Alberta Vital Statistics, Death File, October 2006 release

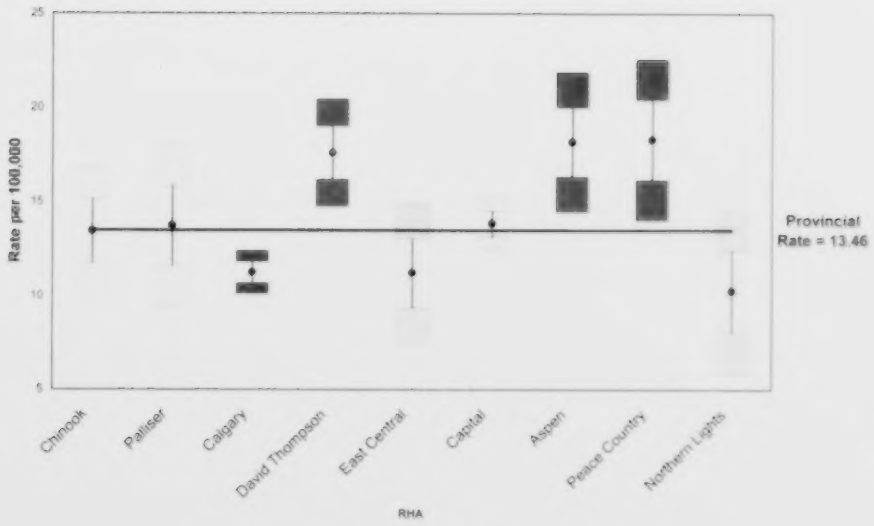
Figure 105: Age Specific Mortality from Suicide in Alberta, 2003 - 05



Source: Alberta Vital Statistics, Death File, October 2006 release

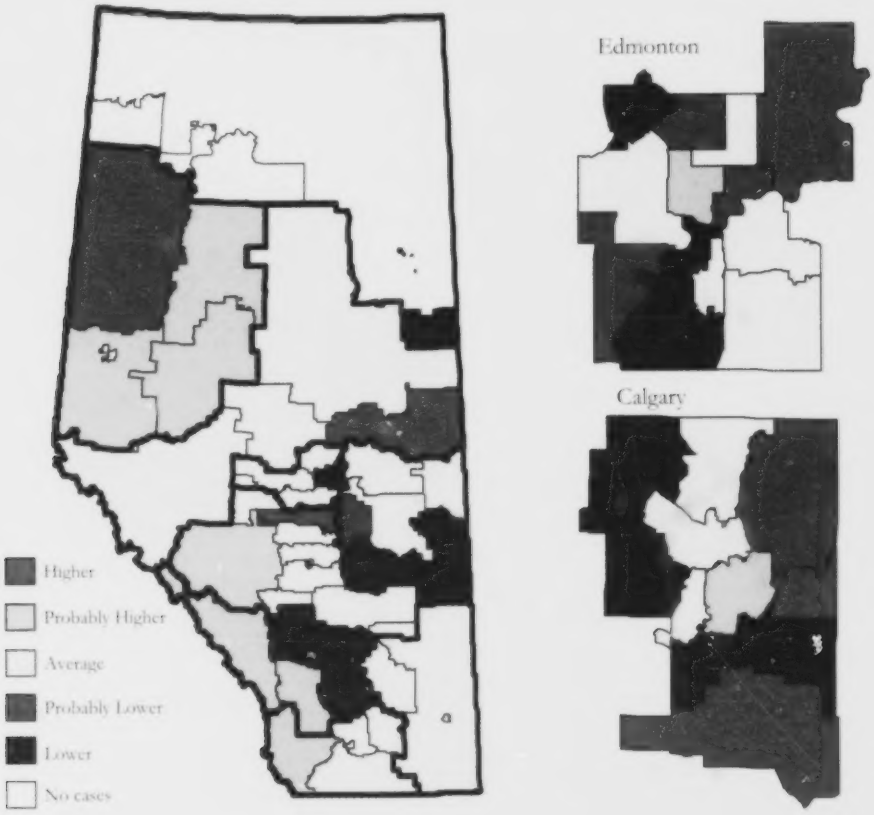
Figure 106: Regional Differences in Mortality Rates from Suicide, 2003 – 05





Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 107: Sub-Regional Differences in Mortality Rates from Suicide, 2003 – 05

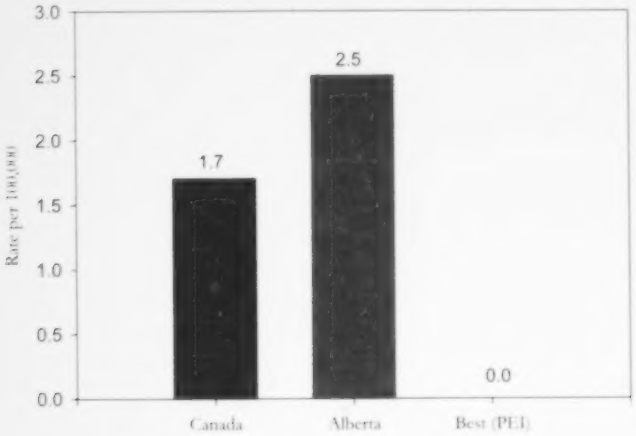


Source: Alberta Vital Statistics, Death File, October 2006 release

Homicide

In Alberta there were 79 deaths due to homicide in 2004. The provincial age-standardized rate of deaths due to homicide was 2.5 per 100,000 in 2004 -- somewhat higher than the national average for that year (1.7 per 100,000). Prince Edward Island was the only province with no homicides in 2004.

Figure 108: Mortality from Homicide, 2004 (Alberta, Canada, Best Province)

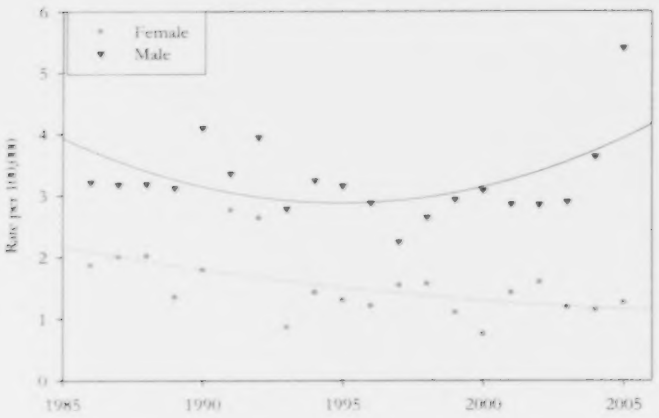


Source: Statistics Canada, Canadian Vital Statistics Database

In Alberta, from 1986 to 2005 female mortality rates for deaths due to homicide decreased slightly overall, while for males it increased. A total of 108 deaths were attributed to homicide in Alberta in 2005, up from 79 in 2004.

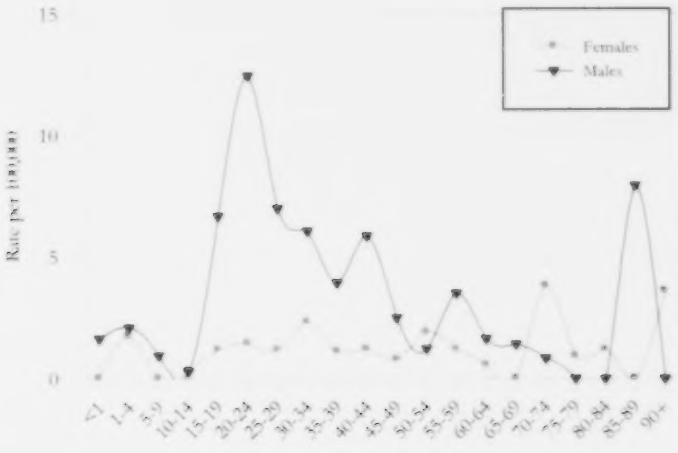
Homicide deaths occur most frequently in young adult and middle age groups, and victims are twice as likely to be male than female. In most cases, victims know their killers; they are often family members.

Figure 109: Mortality from Homicide in Alberta, 1985 - 2005



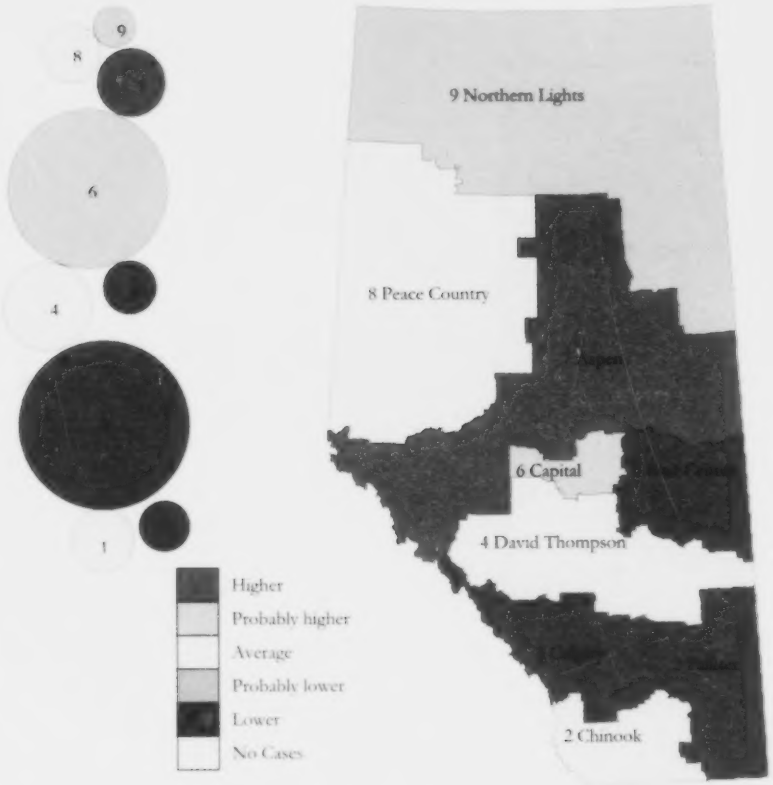
Source: Alberta Vital Statistics, Death File, October 2006 release

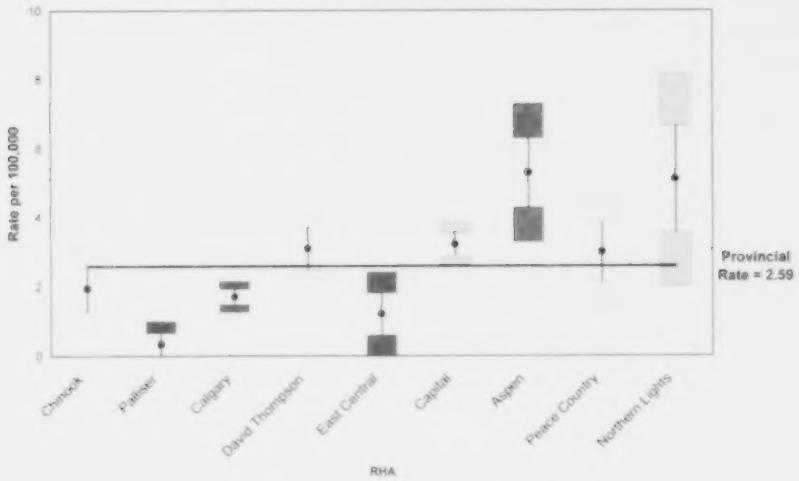
Figure 110: Age Specific Mortality from Homicide in Alberta, 2003 - 05



Source: Alberta Vital Statistics, Death File, October 2006 release

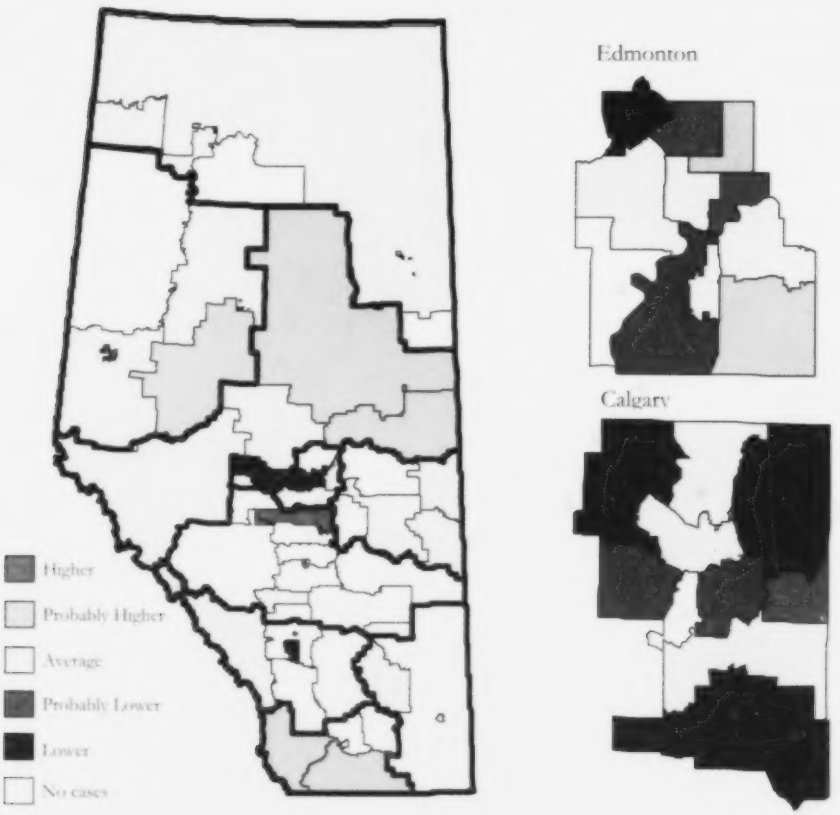
Figure 111: Regional Differences in Homicide Mortality Rates, 2003 - 05





Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 112: Sub-Regional Differences in Homicide Mortality Rates, 2003 – 05

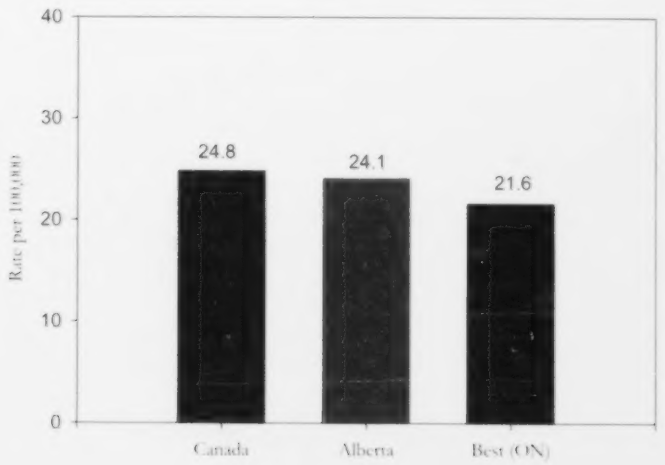


Source: Alberta Vital Statistics, Death File, October 2006 release

Chronic Obstructive Pulmonary Disease (COPD)

Chronic obstructive pulmonary disease includes emphysema and chronic bronchitis. In Alberta in 2004 there were 786 deaths due to COPD. The age-standardized mortality rate from COPD was 24.1 per 100,000. This is similar to the national average (24.8 per 100,000), and higher than the best province, Ontario (21.6 per 100,000).

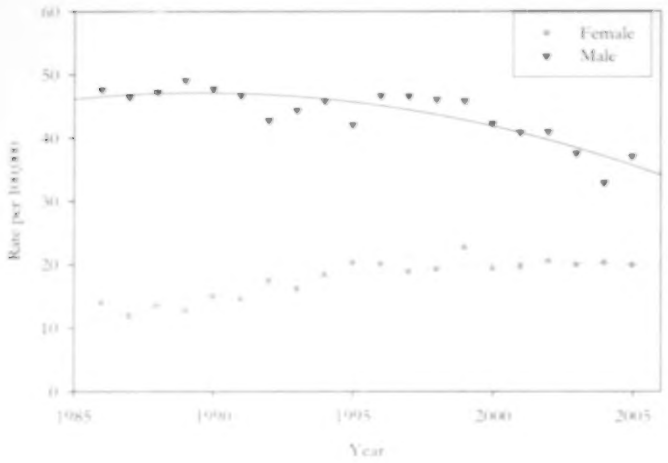
Figure 113: Mortality from COPD, 2004 (Alberta, Canada, Best Province)



Source: Statistics Canada, Canadian Vital Statistics Database

Males have a higher mortality rate from COPD than females, although this is changing. Between 1986 and 2005, the trend shows the mortality rate decreasing for males and increasing for females. A similar trend has also been observed for lung cancer and changing patterns of smoking may account for this observed trend.

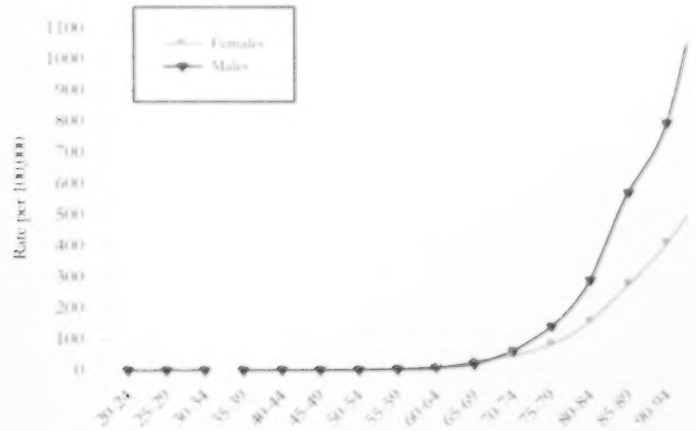
Figure 114: Mortality from COPD in Alberta 1986 - 2005



Source: Alberta Vital Statistics, Death File, October 2006 release

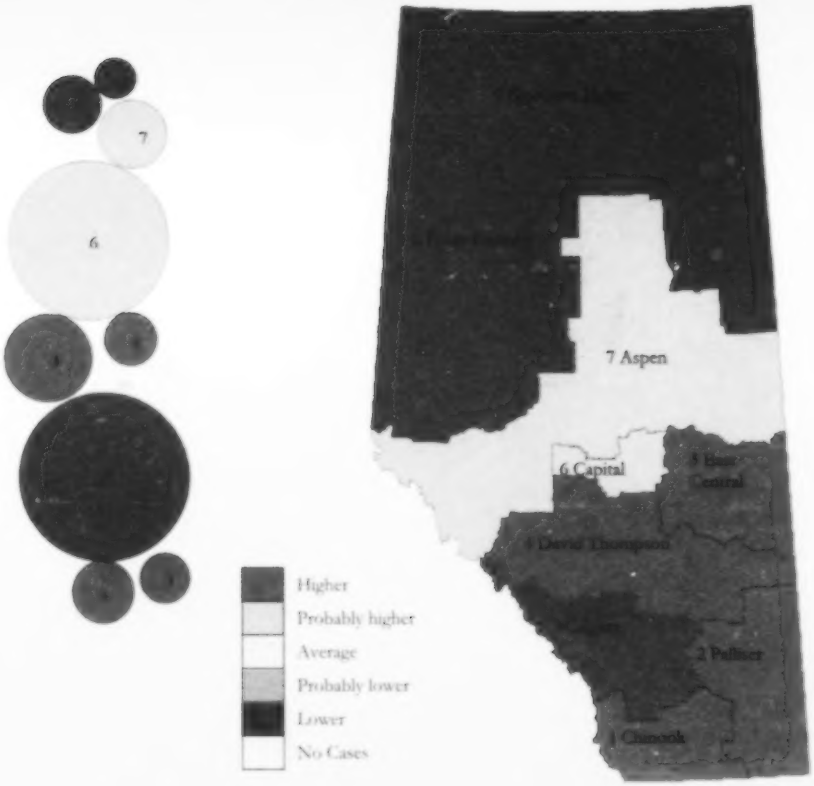
Most deaths from COPD occur in adults over 70 years of age.

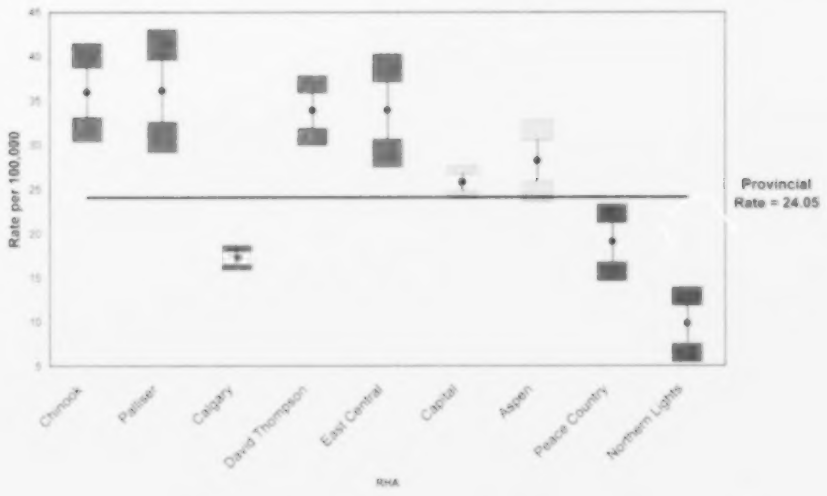
Figure 115: Age-Specific Mortality from COPD in Alberta, 2003 - 05



Source: Alberta Vital Statistics, Death File, October 2006 release

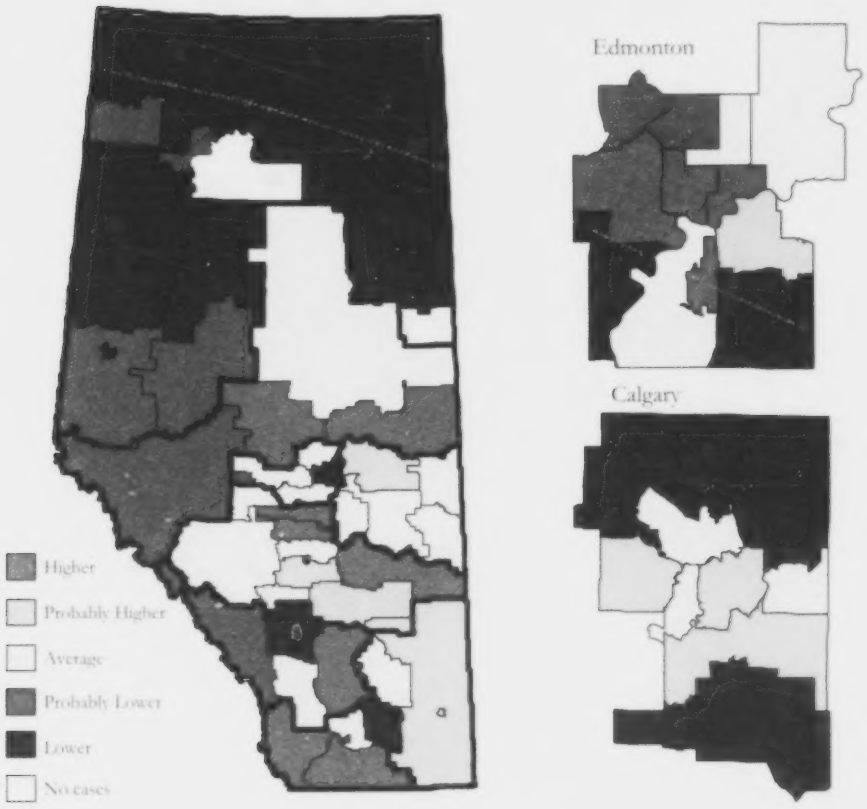
Figure 116: Regional Differences in COPD Mortality Rates, 2003 - 05





Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 117: Sub-Regional Differences in COPD Mortality Rates, 2003 – 05

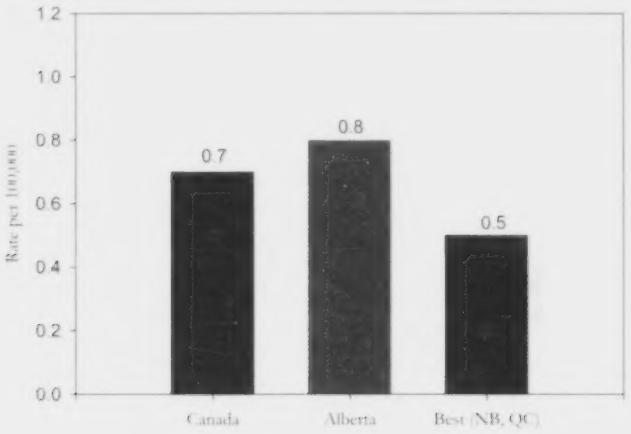


Source: Alberta Vital Statistics, Death File, October 2006 release

Asthma

Concerns have been raised frequently about rates of asthma in Alberta. This respiratory disease often first appears in childhood and can have a significant impact on physical activities. Rates of mortality, though, are generally quite low. In Alberta in 2004 there were 27 deaths due to asthma. The age-standardized mortality rate from asthma was 0.8 per 100,000. This rate is slightly higher than the Canadian average (0.7 per 100,000) and New Brunswick and Quebec were tied with the lowest rate for the provinces (0.5 per 100,000).

Figure 118: Mortality from Asthma, 2004 (Alberta, Canada, Best Province)



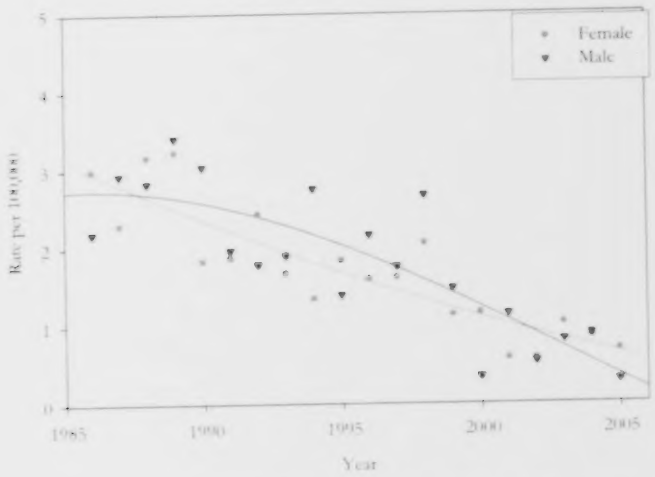
Source: Statistics Canada, Canadian Vital Statistics Database

The difference between mortality rates for males and females is slight, with mortality decreasing for both sexes from 1986 to 2005. Improved medications are making it easier to live successfully with this disease.

Mortality rates for males and females are comparable throughout most of the life span and increase dramatically for both groups after the age of 70.

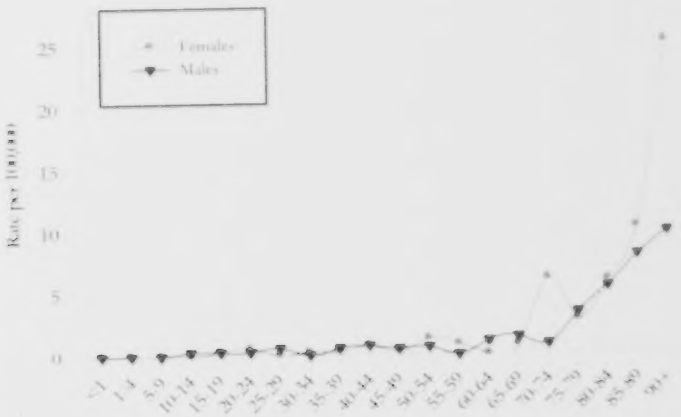
The provincial map shows that Peace Country and Northern Lights region had zero mortality from asthma. Provincial rates are so low that sub-regional comparisons are unstable and have not been shown in a map.

Figure 119: Mortality from Asthma in Alberta 1986 - 2005



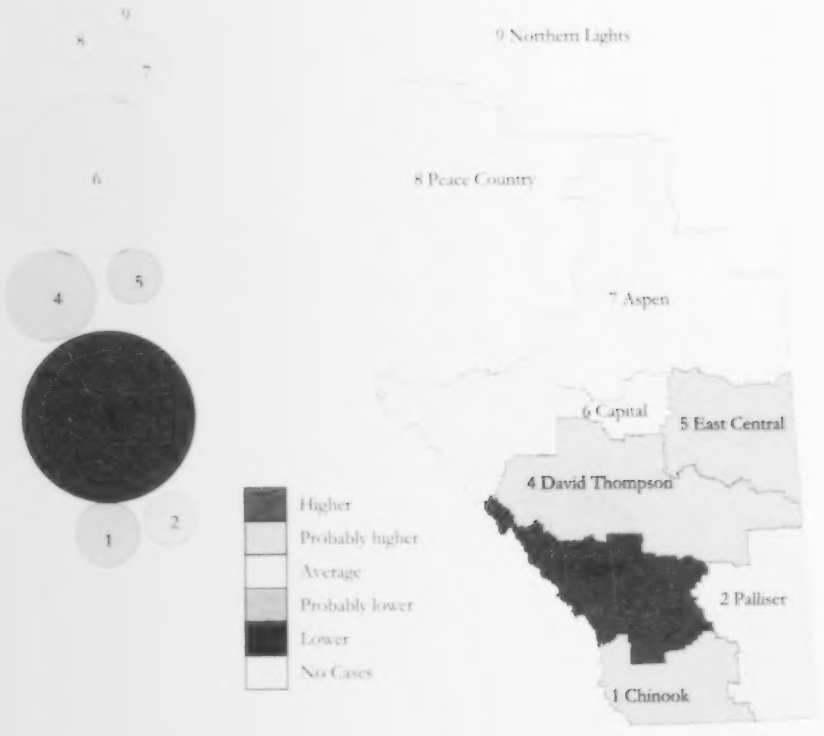
Source: Alberta Vital Statistics, Death File, October 2006 release

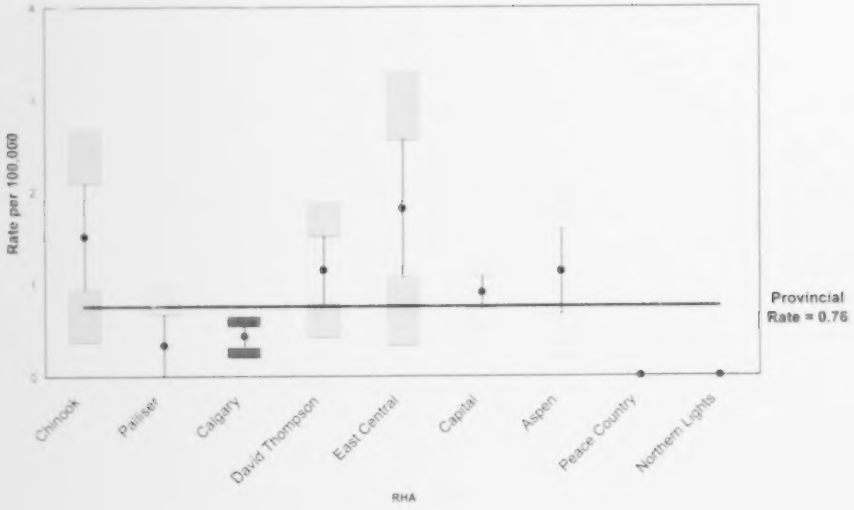
Figure 120: Age Specific Mortality from Asthma in Alberta, 2003 - 2005



Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 121: Regional Differences in Asthma Mortality Rates, 2003 – 05





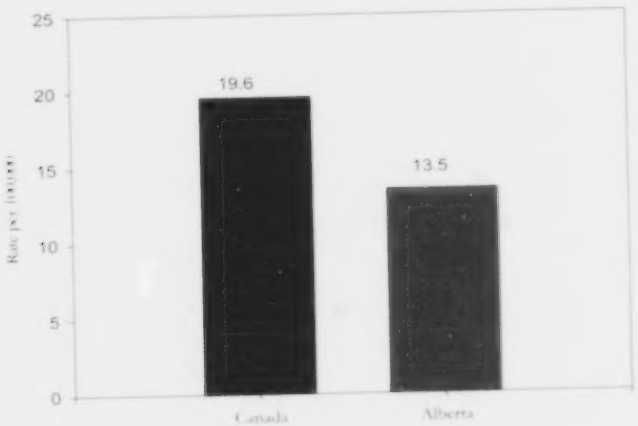
Source: Alberta Vital Statistics, Death File, October 2006 release

Diabetes

Diabetes mellitus – involving fluctuations in blood sugar level resulting from insufficient insulin production or the inadequate use of insulin produced– has two major forms. Type 1 is insulin dependent and tends to occur in young people between the ages of 12 and 14. Type 2 is not insulin dependent and tends to affect older age groups and those who are overweight and obese. Type 2 diabetes accounts for the large majority of diabetes cases and is a preventable disease.

In Alberta in 2004 there were 437 deaths due to diabetes. Alberta had the lowest age-standardized mortality rate across the provinces in 2004 at 13.5 per 100,000. The Canadian average was 19.6. It should be noted that diabetes is likely to be underreported as a cause of death, because its complications can include heart disease, kidney failure, and stroke.

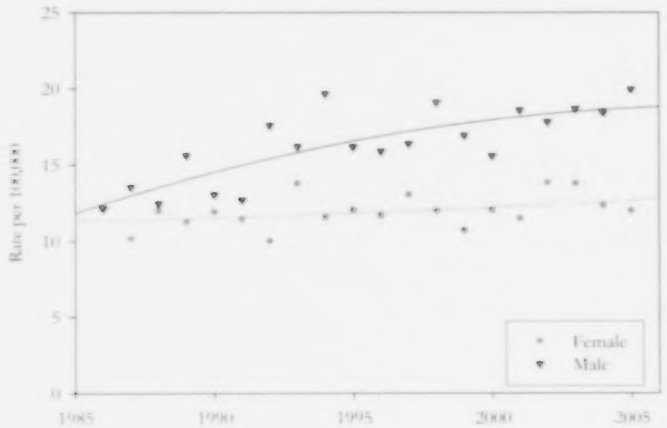
Figure 122: Mortality Rates for Diabetes, 2004 (Alberta, Canada, Best Province)



Source: Statistics Canada, Canadian Vital Statistics Database

Diabetes mortality rates have been increasing over the last nearly two decades. Rates used to be similar between the sexes, but recently this has changed with men having higher mortality rates than women from diabetes.

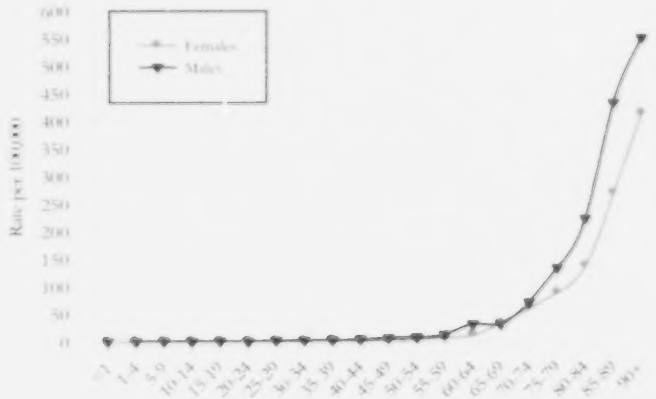
Figure 123: Mortality Rates for Diabetes in Alberta, 1986 - 2005



Source: Alberta Vital Statistics, Death File, October 2006 release

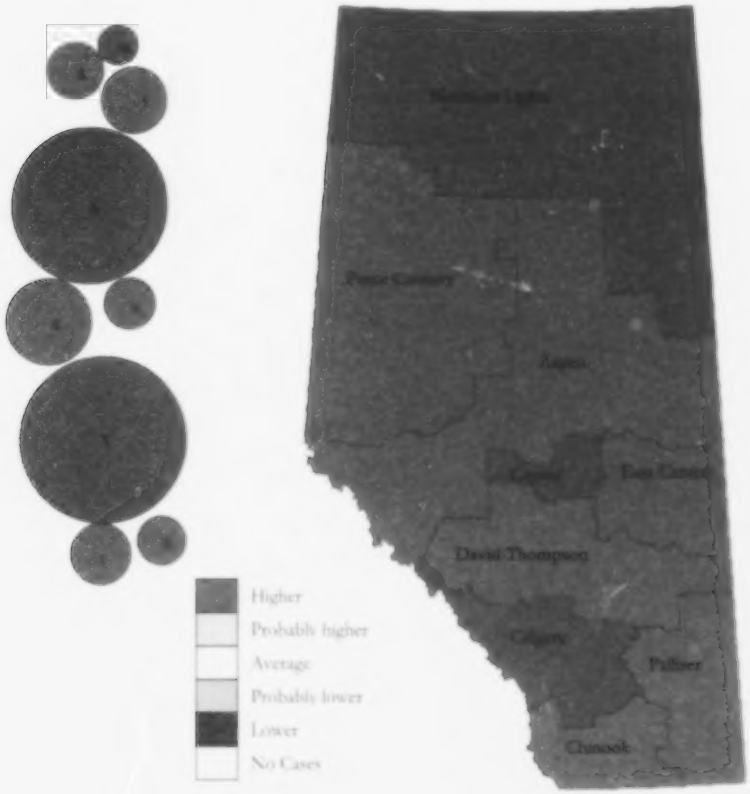
Over the course of the human lifespan, there is very little difference between the sexes in mortality rates until around age 70 when there is a dramatic increase, more markedly in men.

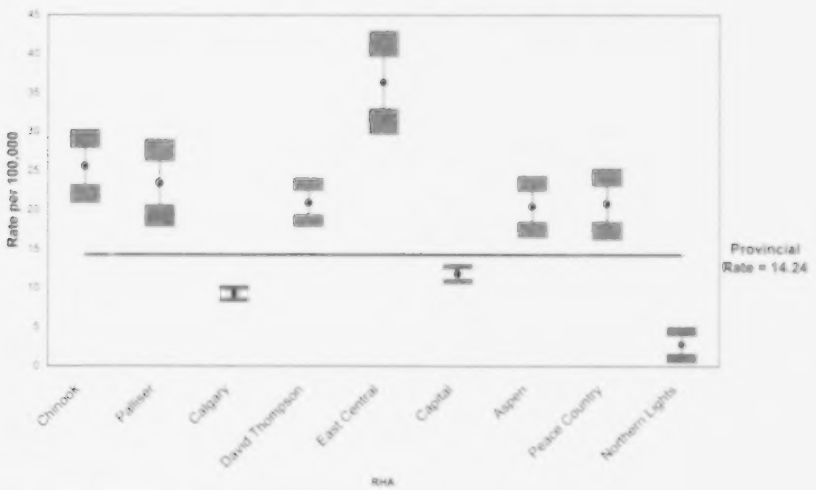
Figure 124: Age-Specific Death Rates for Diabetes in Alberta, 2003-2005



Source: Alberta Vital Statistics, Death File, October 2006 release

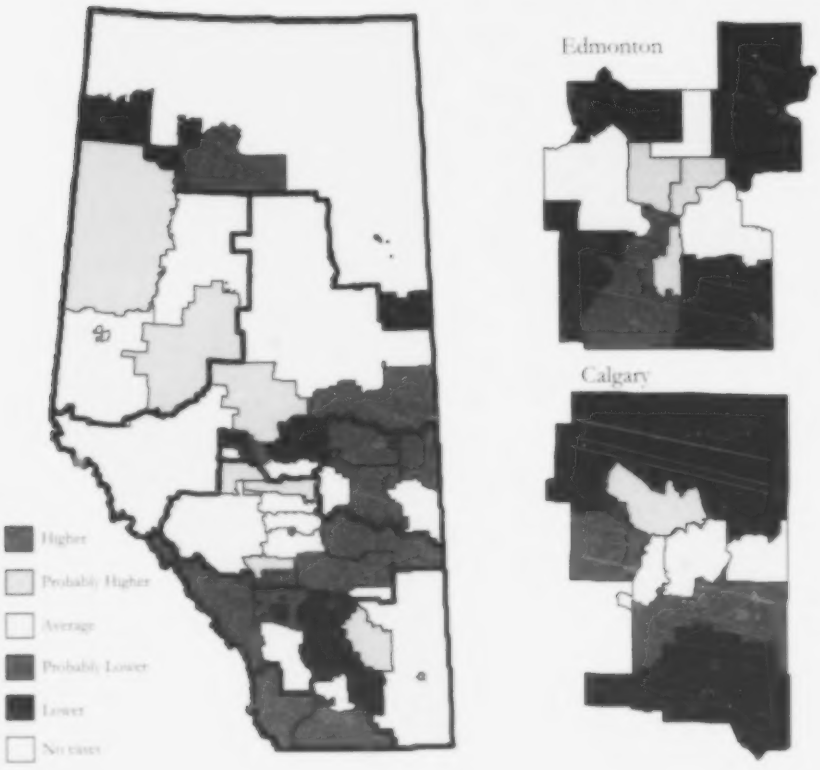
Figure 125: Regional Differences in Diabetes Mortality Rates, 2003-05





Source: Alberta Vital Statistics, Death File, October 2006 release.

Figure 126: Sub-Regional Differences in Diabetes Mortality Rates, 2003-05



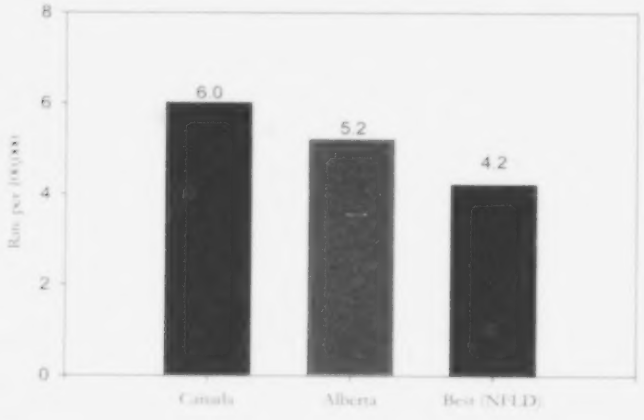
Source: Alberta Vital Statistics, Death File, October 2006 release

Chronic Liver Disease and Cirrhosis

The liver manufactures enzymes necessary for body functions and for detoxifying poisons, including alcohol, that enter the blood stream. The term cirrhosis applies when normal liver tissue is destroyed and replaced by scar tissue. This impedes the circulation of the blood through the liver and reduces its detoxifying powers. The most common cause of cirrhosis is chronic alcoholism; however, it may also be caused by hepatitis and other diseases.

In 2004 in Alberta there were 169 deaths due to chronic liver disease and cirrhosis. The age-standardized mortality rate was 5.2 per 100,000 population, slightly lower than the national average of 6.0. The lowest provincial rate was Newfoundland and Labrador at (4.2 per 100,000).

Figure 127: Mortality from Chronic Liver Disease and Cirrhosis, 2004
(Alberta, Canada, Best Province)

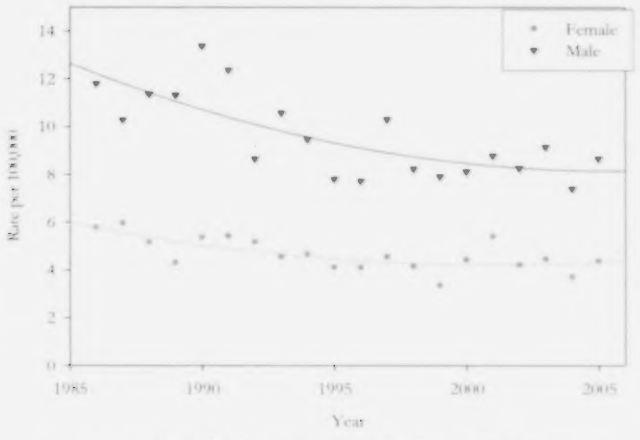


Source: Statistics Canada, Canadian Vital Statistics Database

The actual number of deaths in Alberta from this cause is relatively low (203 deaths in 2005). Rates of mortality for both males and females are decreasing slightly, but the likelihood of dying from cirrhosis and liver disease remains higher for males than for females.

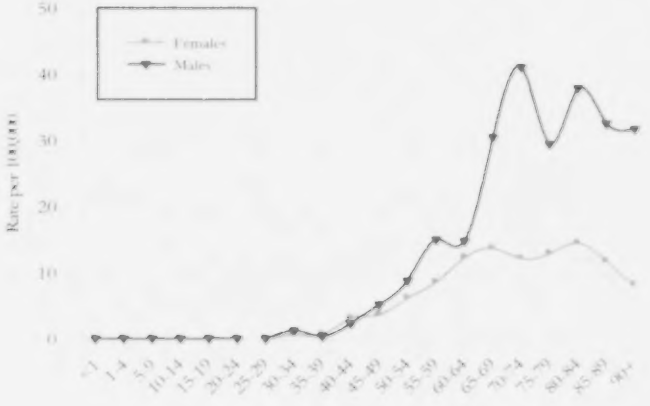
Cirrhosis and chronic liver disease attack a younger population than respiratory and circulatory diseases. Obstructive liver disease causes mortality in infants; other liver diseases begin to take their toll on people in their late twenties. Mortality from this cause peaks in the mid 70s for both males and females.

Figure 128: Mortality from Chronic Liver Disease and Cirrhosis in Alberta, 1986 - 2005



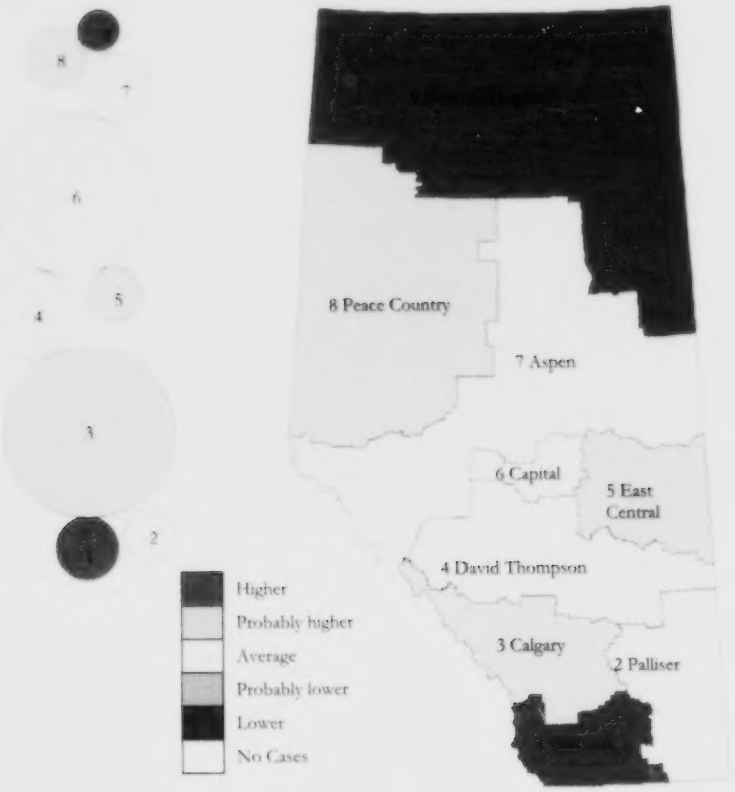
Source: Alberta Vital Statistics, Death File, October 2006 release

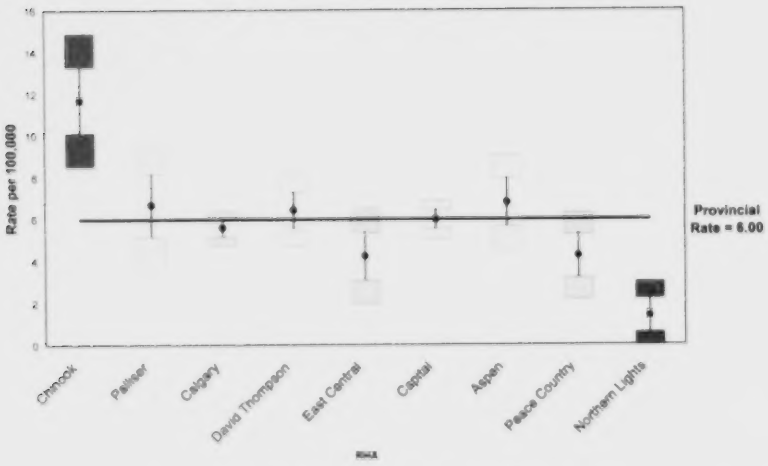
Figure 129: Age-Specific Mortality from Chronic Liver Disease and Cirrhosis, 2003-05



Source: Alberta Vital Statistics, Death File, October 2006 release

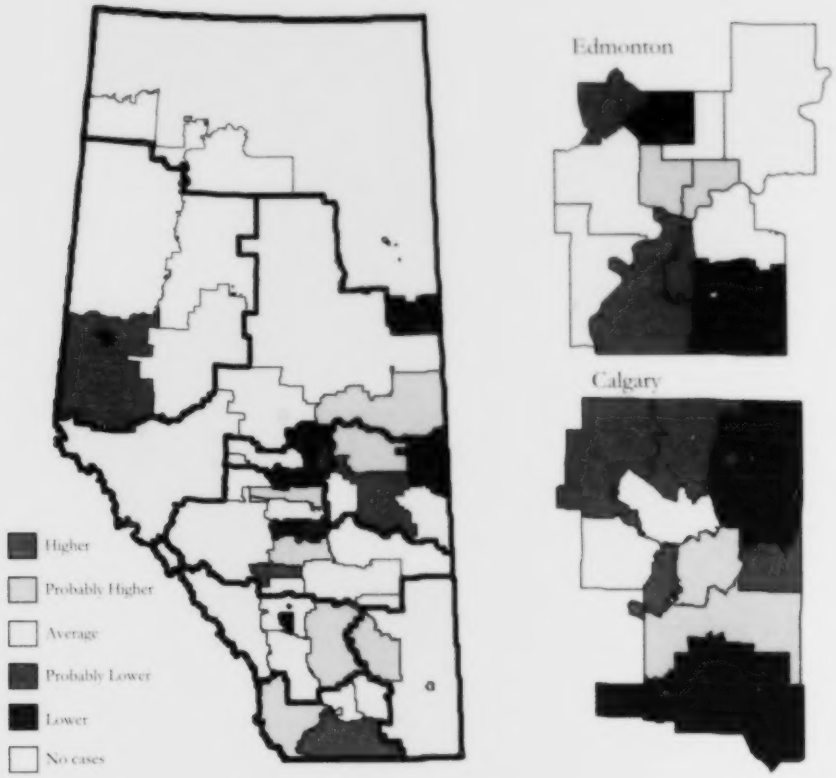
Figure 130: Regional Differences in Chronic Liver Disease & Cirrhosis Mortality Rates, 2003-05





Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 131: Sub-Regional Differences in Chronic Liver Disease & Cirrhosis Mortality Rates, 2003–05



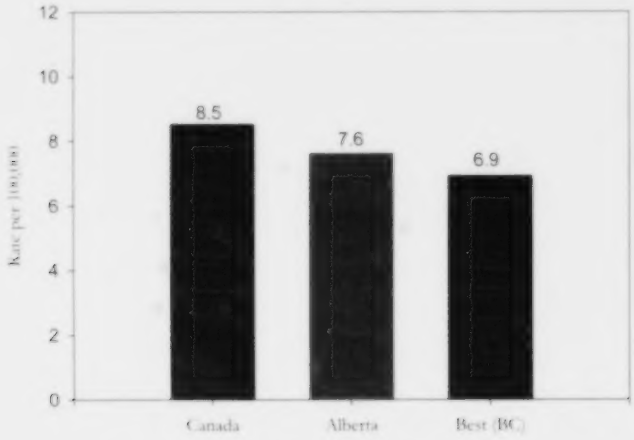
Source: Alberta Vital Statistics, Death File, October 2006 release

Kidney Disease

The most common forms of kidney disease are nephritis and nephrosis, which involve inflammation of the kidney. While kidney failure may be the end result of an infectious process, other major causes include high blood pressure, diabetes, exposure to toxic substances and congenital anomalies.

In 2004, there were 253 deaths due to kidney disease in Alberta. The age-standardized mortality rate for Alberta was 7.6 per 100,000. This is less than the national average (8.5 per 100,000). British Columbia had the lowest provincial rate in Canada at 6.9 per 100,000.

Figure 132: Mortality Rates from Kidney Disease, 2004 (Alberta, Canada, Best Province)

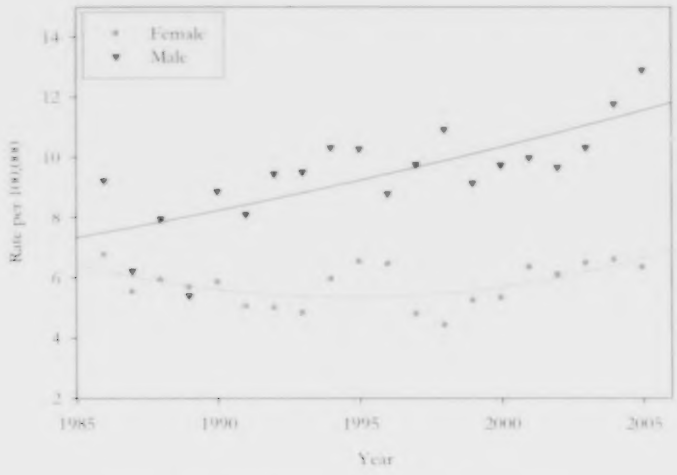


Source: Statistics Canada, Canadian Vital Statistics Database

Rates of mortality from kidney disease have been increasing for both males and females, though mortality for males has increased more than females. This increasing trend could be due to increasing rates of diabetes in the population. End-stage kidney disease requires a patient to be treated with dialysis or to undergo a kidney transplant.

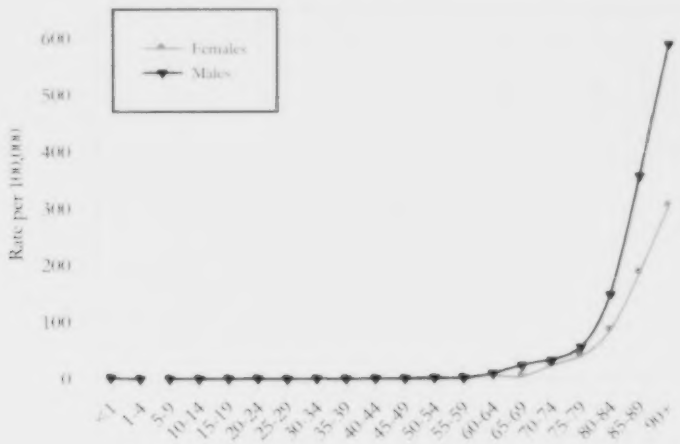
Rates are relatively constant for males and females by age group, except for the older age groups. Males are more likely than females to succumb to kidney disease after age 65.

Figure 133: Mortality Rates from Kidney Disease in Alberta, 1986 - 2005



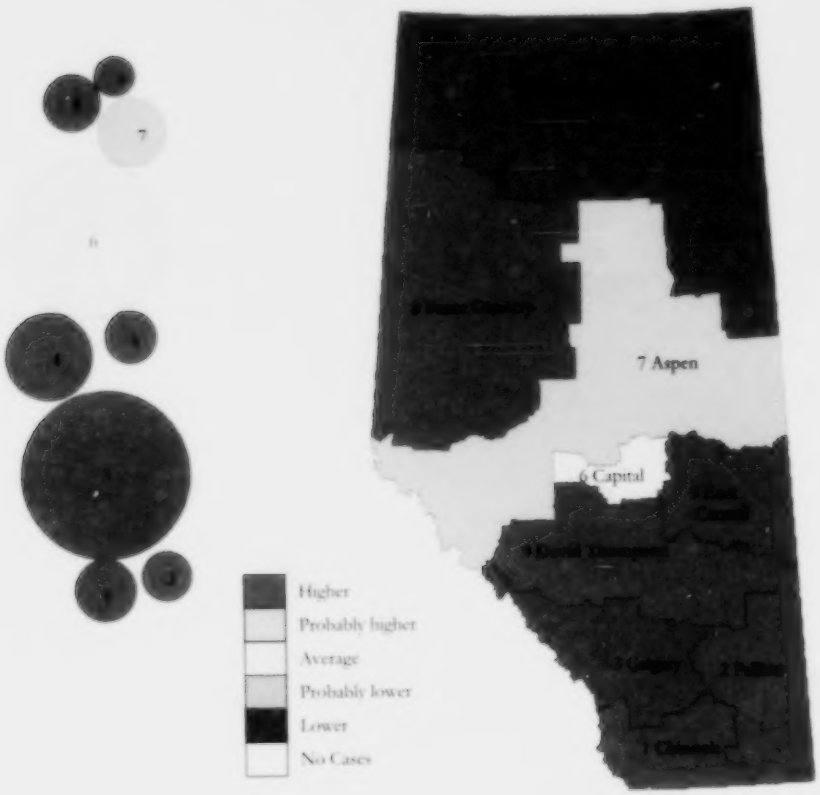
Source: Alberta Vital Statistics, Death File, October 2006 release

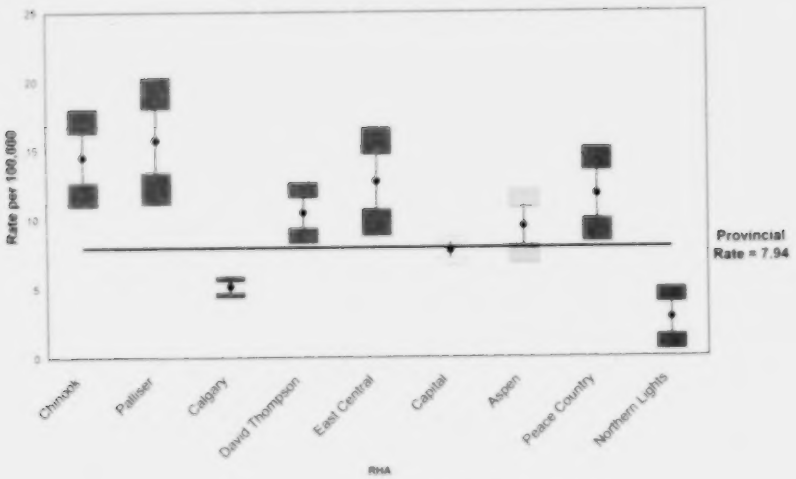
Figure 134: Age-Specific Death Rates from Kidney Disease in Alberta, 2003 - 05



Source: Alberta Vital Statistics, Death File, October 2006 release

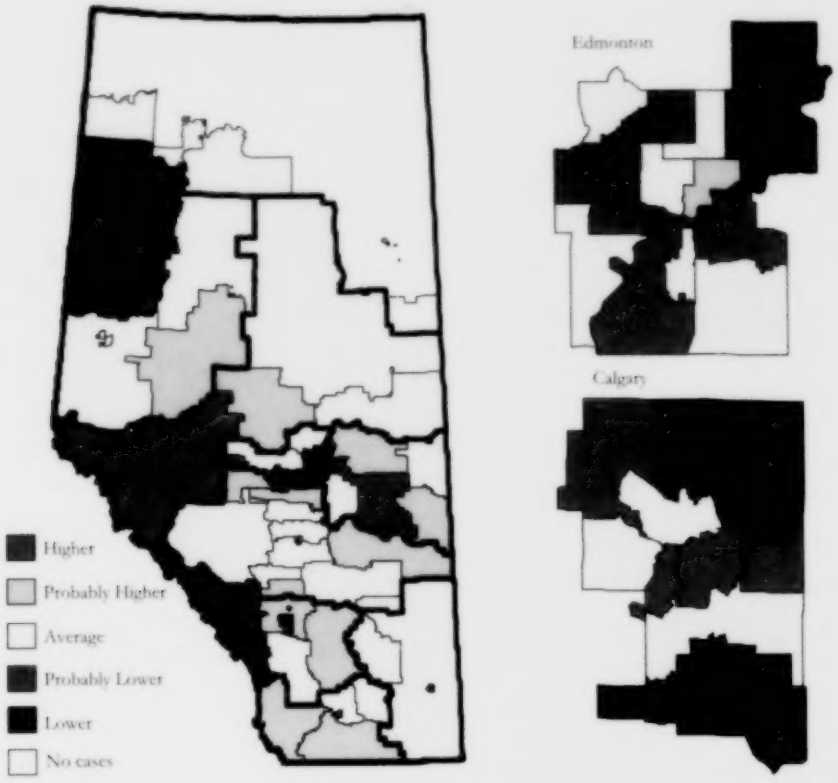
Figure 135: Regional Difference in Kidney Disease Mortality Rates, 2003 - 05





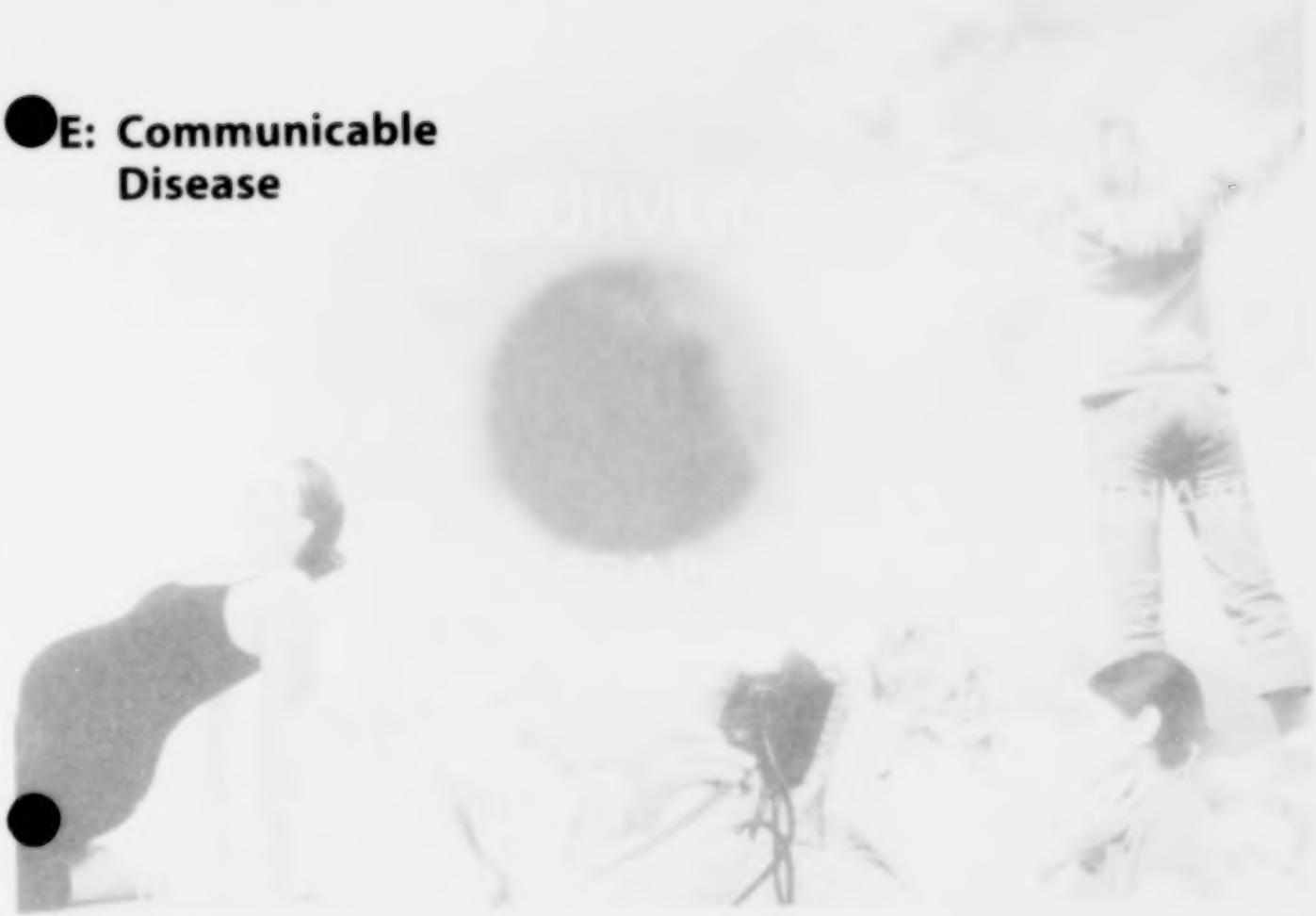
Source: Alberta Vital Statistics, Death File, October 2006 release

Figure 136: Sub-Regional Difference in Kidney Disease Mortality Rates, 2003 – 05



Source: Alberta Vital Statistics, Death File, October 2006 release

E: Communicable Disease



SECTION E: COMMUNICABLE DISEASE

Data used in this section come from two main sources.

Data for incidence measures of infectious diseases for Canada were obtained from the Centre for Infectious Disease Prevention and Control of the Public Health Agency of Canada (PHAC). Notifiable Disease Surveillance On-Line is a web based application developed by the Centre for Infectious Disease Prevention and Control of PHAC that provides rates of notifiable infectious diseases from reporting provinces. National data are reported for 2004; however these data are preliminary and subject to change. Therefore, caution should be used in the interpretation of these results. This resource can be accessed at the following web address:

http://www.phac-aspc.gc.ca/dsol-smed/index.html

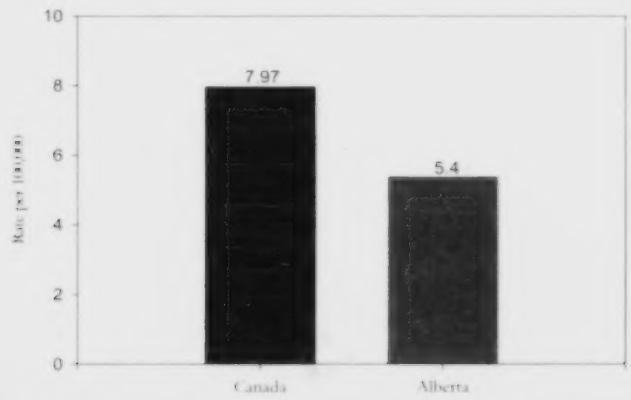
Provincial data used to report rates over time, age and sex specific rates, and regional rates were obtained from communicable diseases databases at Alberta Health and Wellness. The specific database sources are indicated for each graph.

HIV AND AIDS

Acquired immunodeficiency syndrome (AIDS) is caused by the human immunodeficiency virus (HIV), which continues to infect increasing numbers of Canadians. From the first report of AIDS in Canada in 1979 through 1994, there was a fairly steady increase in cases reported, with Alberta following the same pattern. Since 1994, the number of new cases of AIDS reported and the mortality rate have declined due to improved treatment.

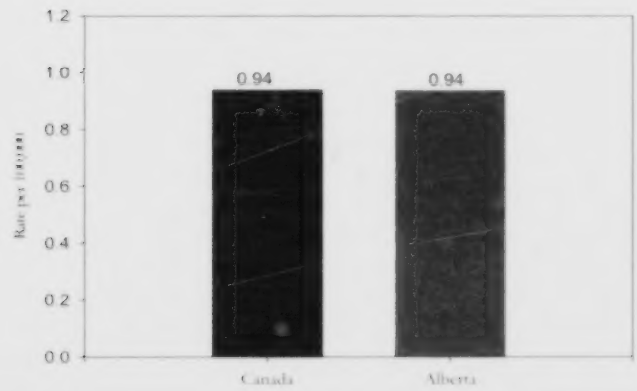
Currently, new HIV infections continue to occur at a fairly steady rate, however the rate of new AIDs cases has declined over the last two decades. In 2004, the rate for new HIV infection was 5.4 per 100,000, lower than the Canadian average of 7.97. The rate for new AIDS cases in Alberta was 0.94 per 100,000 population, the same as the Canadian average

Figure 137: Incidence of HIV, 2004 (Canada, Alberta)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada

Figure 138: Incidence of AIDS, 2004 (Canada, Alberta)

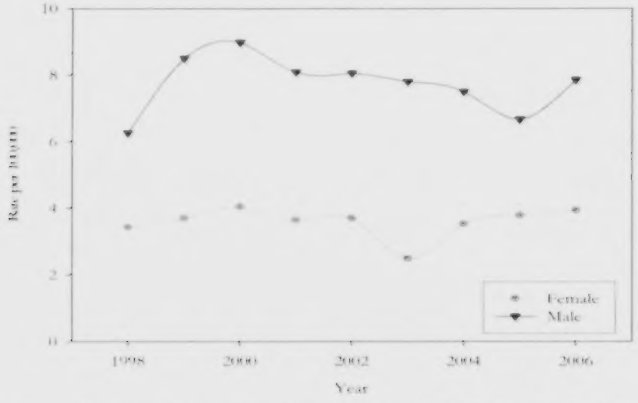


SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada

HIV was added to the list of reportable diseases in Alberta on May 1, 1998, and all pregnant women have been screened routinely since September 1, 1998. Prior to that date, informal, non-nominal reports of persons who tested positive for HIV were provided in aggregate form to Alberta Health and Wellness by the Provincial Laboratories in Calgary and Edmonton. The total number of laboratory tests performed and the number of positive test results from that time period are not a true indicator of the number of persons infected with HIV, as an individual could have had more than one test in a year and are thus not included here.

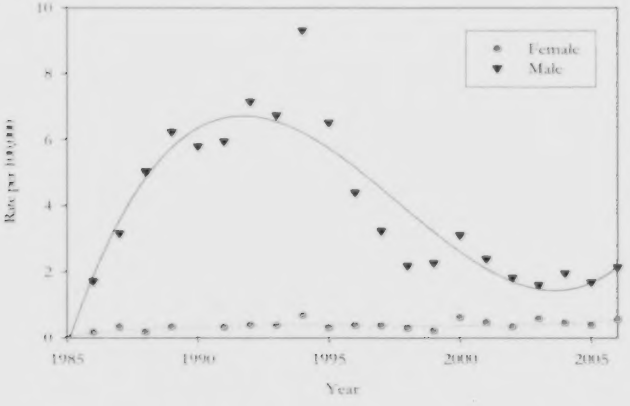
Since 1998 the rate of HIV infection in Alberta has remained fairly stable despite public education initiatives, and is higher in men than in women. In 2006, the provincial rate per 100,000 was about 4 for women and 8 for men. The incidence of AIDS in Alberta was rising in men until the mid 1990s after which it declined until 2003 and leveled out. For women the rate of AIDS has remained fairly stable over the last 20 years and is lower than in men.

Figure 139: Trends in Incidence of HIV in Alberta, 1998 – 2006



Source: Bloodborne Pathogens Database, Alberta Health and Wellness, 1998 - 2006;

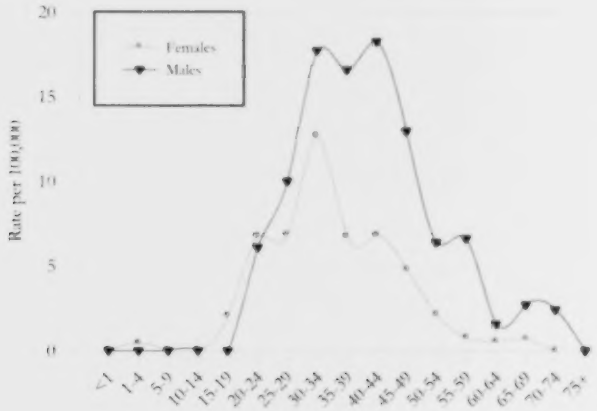
Figure 140: Trends in Incidence of AIDs in Alberta, 1986 - 2006



Source: Bloodborne Pathogens Database, Alberta Health and Wellness, 1986 - 2006
HIV/AIDS Statistical Reports

Most HIV infections are detected in men and women between 25 and 45 years of age

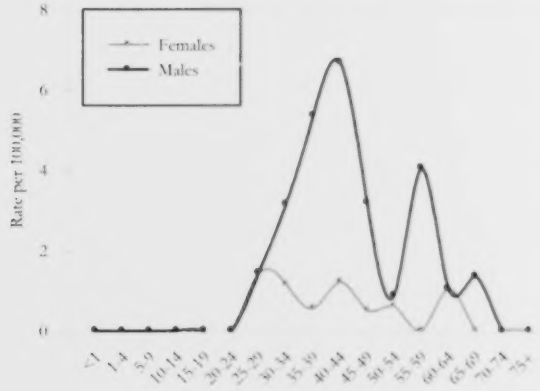
Figure 141: Age-Specific Incidence of HIV in Alberta, 2004 – 2006



Source: Bloodborne Pathogens Database, Alberta Health and Wellness, 2004-06; Communicable Disease Reporting System

Most cases of AIDs are detected in middle aged men and women in Alberta; however rates are higher in men than in women.

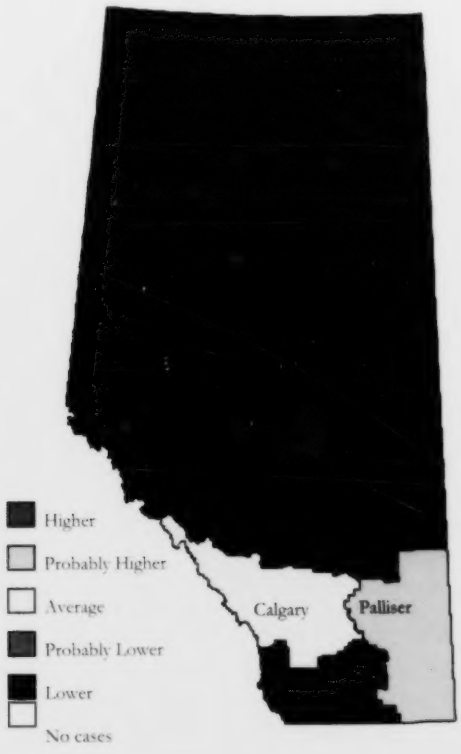
Figure 142: Age-specific Incidence of AIDs Cases in Alberta, 2004 - 2006

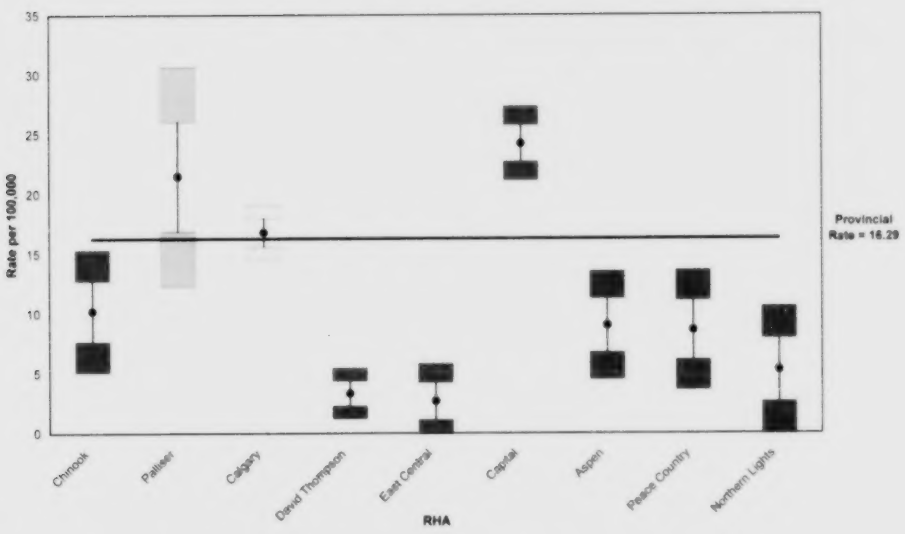


Source: Bloodborne Pathogens Database, Alberta Health and Wellness, 2004-06


Northern Lights
Peace Country
Aspen
East Central
Parkland

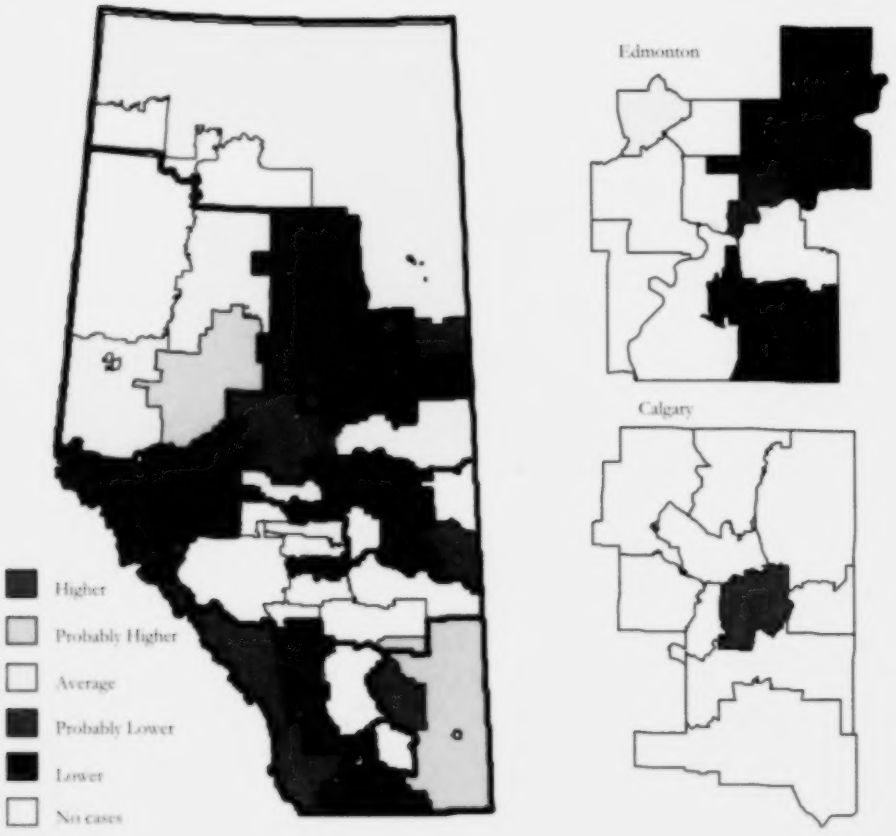
Figure 143: Regional differences in Incidence of HIV Cases, 2004 - 06





Source: Bloodborne Pathogens Database, Alberta Health and Wellness, 2004-06

Figure 144: Sub-Regional differences in Incidence of HIV Cases, 2004 – 06

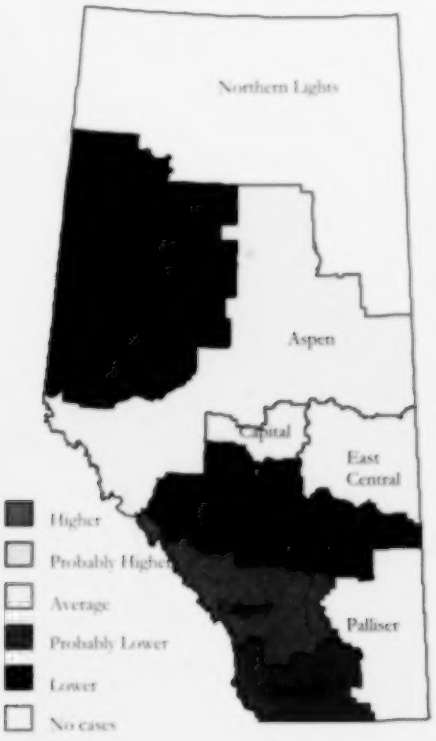


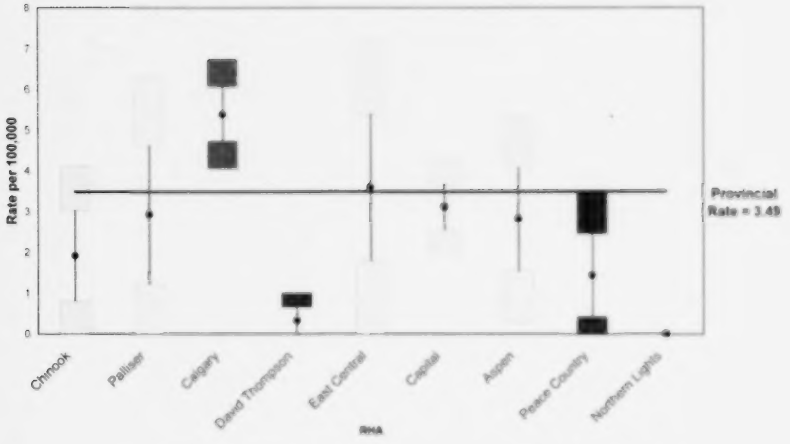
Source: Bloodborne Pathogens Database, Alberta Health and Wellness, 2004-06


Peace Country
David Thompson

Provincial rates of AIDs cases are so low that sub-regional comparisons are unstable and have not been shown in a map.

Figure 145: Regional differences in Incidence of AIDS Cases, 2004 – 06





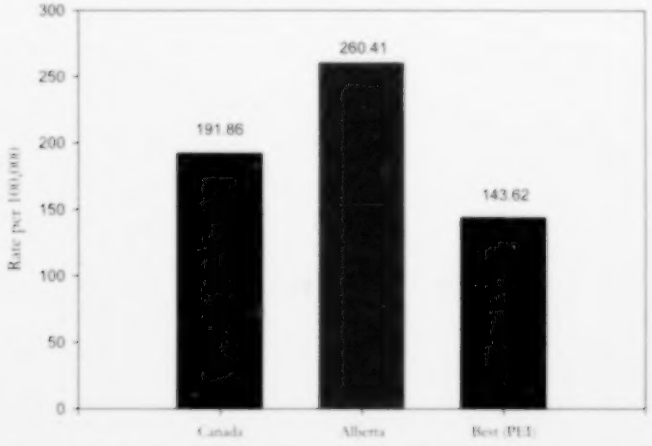
Source: Bloodborne Pathogens Database, Alberta Health and Wellness, 2004-06

Chlamydia

Chlamydia infection of the genitourinary tract is the most commonly reported STI in Alberta. If untreated, these infections can result in pelvic inflammatory disease, which can cause infertility and chronic pelvic pain.

While Alberta's rate appears high in comparison to the rest of the country (in 2004 it was 260.41, compared to the national average of 191.86), this reflects the current screening activity in Alberta for Chlamydia among young females. Provinces with lower rates may not be actively screening for this disease.

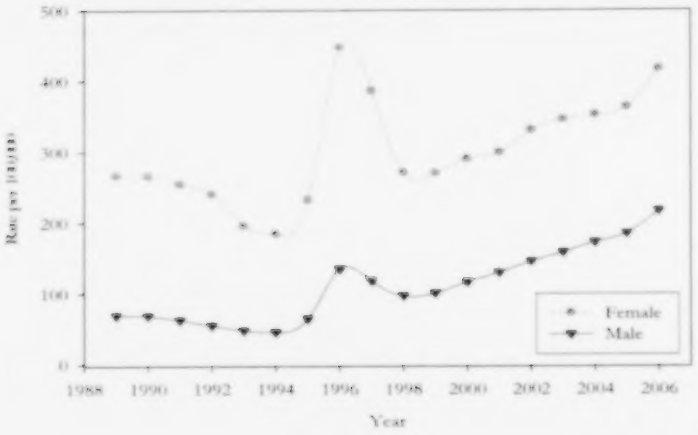
Figure 146: Incidence of Chlamydia, 2004 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

Genitourinary chlamydia became a reportable infectious disease in 1989. The reported rate of chlamydia was gradually declining between 1989 and 1995, but then began to dramatically increase over the last 10 years. The 2006 provincial rate per 100,000 was 416 for females and 217 for males. This increase is occurring despite education and partner notification initiatives for sexually transmitted infections.

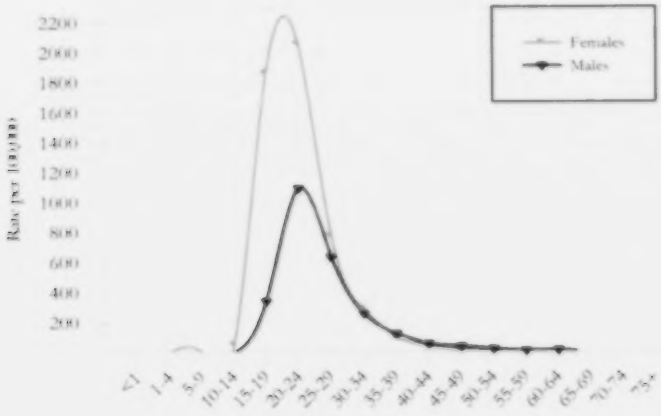
Figure 147: Incidence of Chlamydia in Alberta, 1989 - 2006



Source: Statistical Reports, STI Control, Alberta Health and Wellness, 1989 - 2006

The reported chlamydia rate is much higher for young females than for young males. This is related to current screening and treatment practices. Increased detection has come from screening of young women who do not have symptoms. Male partners of these women are treated to prevent further spread, without having laboratory confirmation of the disease (and therefore without being reported as cases).

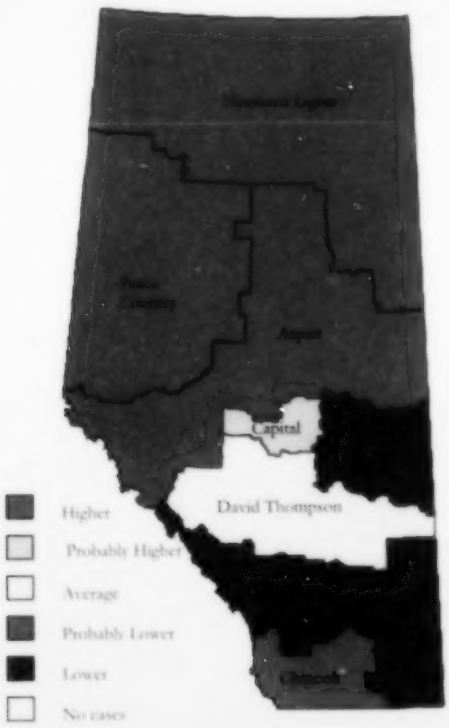
Figure 148: Age-Specific Incidence of Chlamydia in Alberta, 2004 - 2006

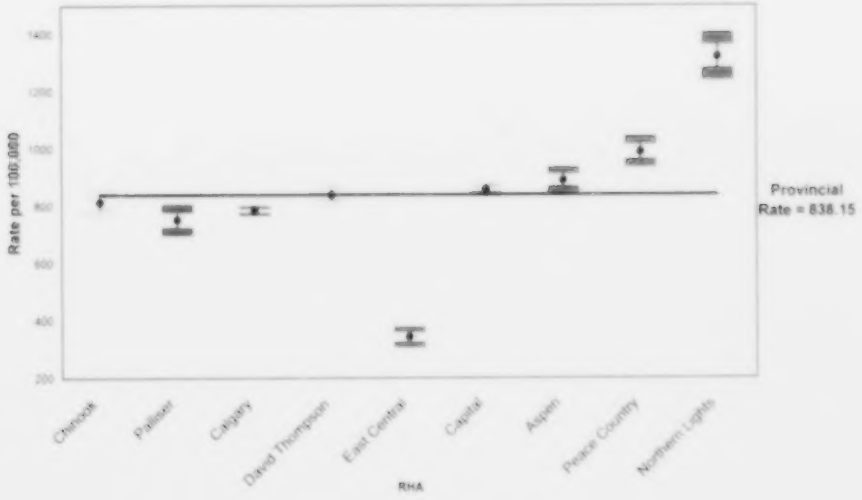


Source: Statistical Reports, STI Control, Alberta Health and Wellness, 2004-06

Rates of Chlamydia are higher in the northern half of the province, particularly in the Northern Lights region.

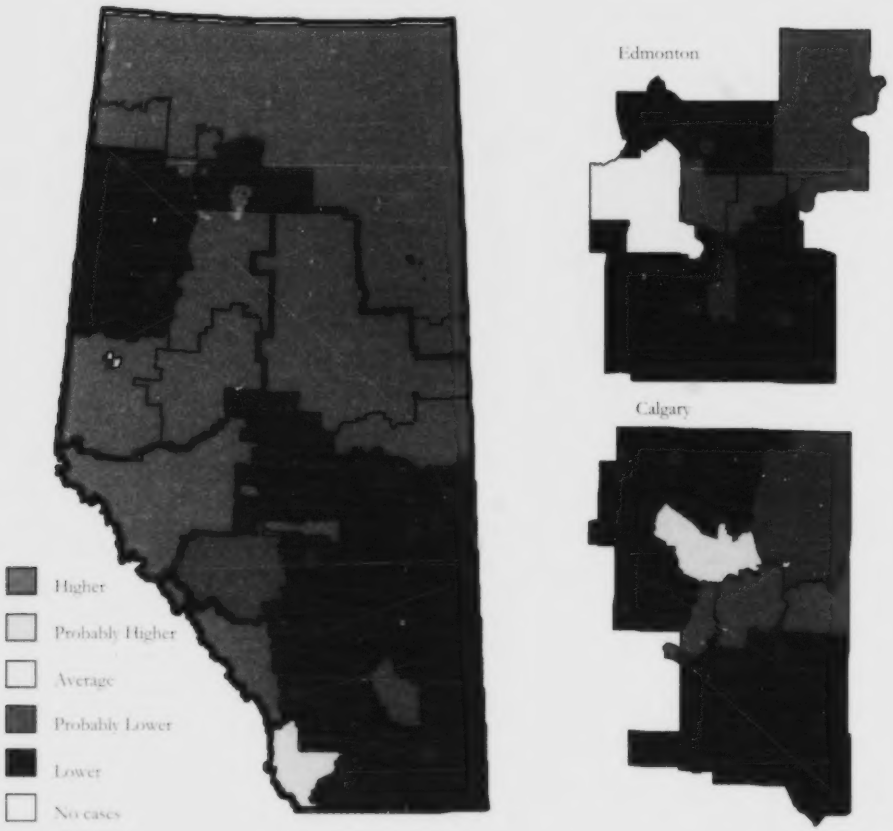
Figure 149: Regional Differences in Incidence of Chlamydia, 2004 - 06





Source: Statistical Reports, STI Control, Alberta Health and Wellness, 2004-06

Figure 150: Sub-regional Differences in Incidence of Chlamydia, 2004 – 06



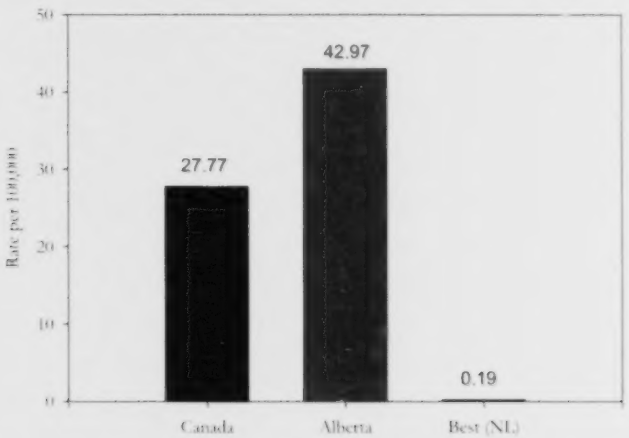
Source: Statistical Reports, STI Control, Alberta Health and Wellness, 2004-06

Gonorrhea

Gonorrhea is a common sexually transmitted disease in Alberta that usually responds well to treatment. Complications from untreated infection can include pelvic inflammatory disease (which can lead to infertility), ectopic pregnancy and chronic pelvic pain.

In Alberta, the reported rate of gonorrheal infection has increased recently and was the fourth highest rate in Canada in 2004. The 2004 rate of 42.97 per 100,000 was much higher than the Canadian average of 27.77 and the lowest province, Newfoundland and Labrador (0.19). Low rates in some provinces may reflect differences in reporting practices.

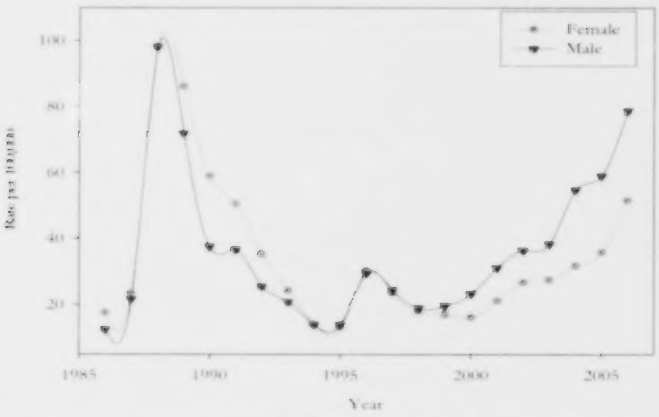
Figure 151: Incidence of Gonorrhea, 2004 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

The rate of gonorrhea in Alberta showed a great spike in 1988-89, then decreased and leveled out through the 1990s, and has been increasing again since 1998. In 2006, the provincial rate per 100,000 was about 52 for women and 79 for men.

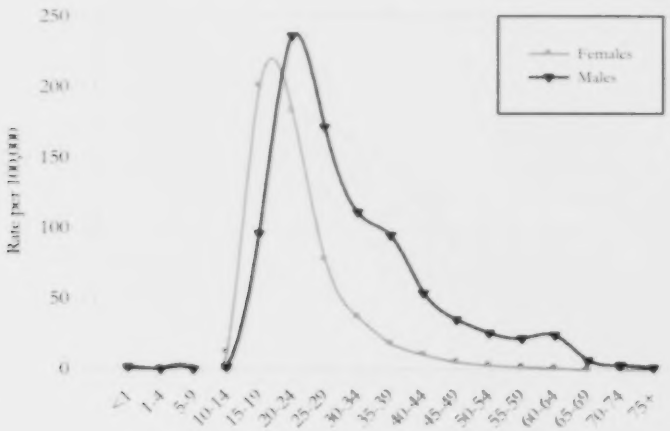
Figure 152: Incidence of Gonorrhea in Alberta, 1986 - 2006



Source: Statistical Reports, STI Control, Alberta Health and Wellness, 1986 - 2006

From 2004 to 2006, women aged 15 to 25 and men aged 20 to 29 had the highest rates of infection. Females are more likely to contract the disease at a younger age than males, likely due to unprotected sexual intercourse commencing at an earlier age for females.

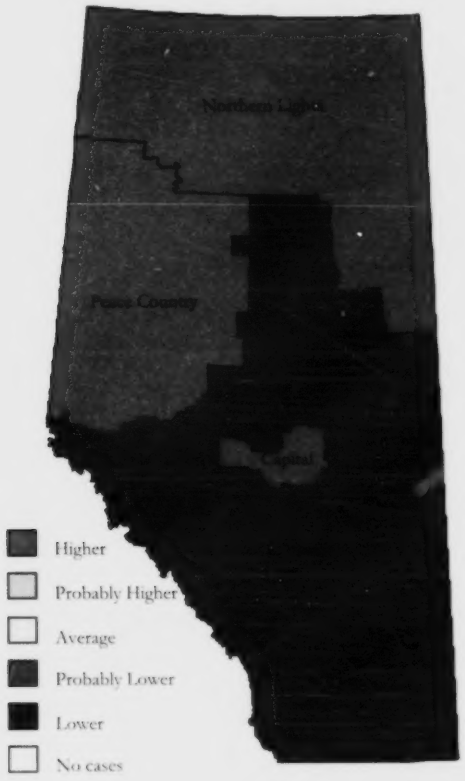
Figure 153: Age-Specific Incidence of Gonorrhea in Alberta, 2004 - 2006

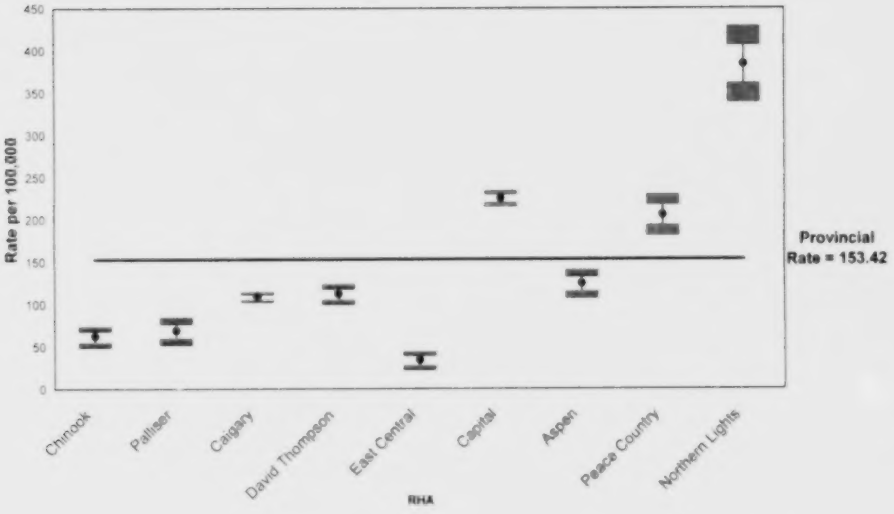


Source: Statistical Reports, STI Control, Alberta Health and Wellness, 2004-06

Rates of Gonorrhea are higher in Peace Country, Capital and particularly the Northern Lights region of the province.

Figure 154: Regional Differences in Incidence of Gonorrhea, 2004 - 06

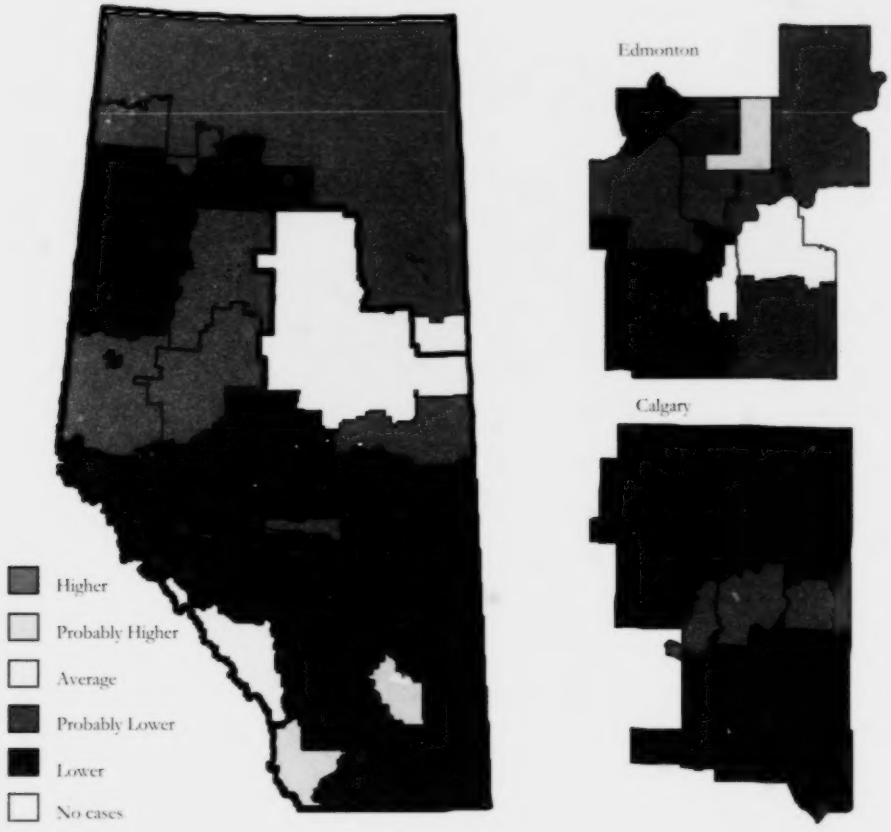




Source: Statistical Reports, STI Control, Alberta Health and Wellness, 2004-06



Figure 155: Sub-regional Differences in Incidence of Gonorrhea, 2004 – 06



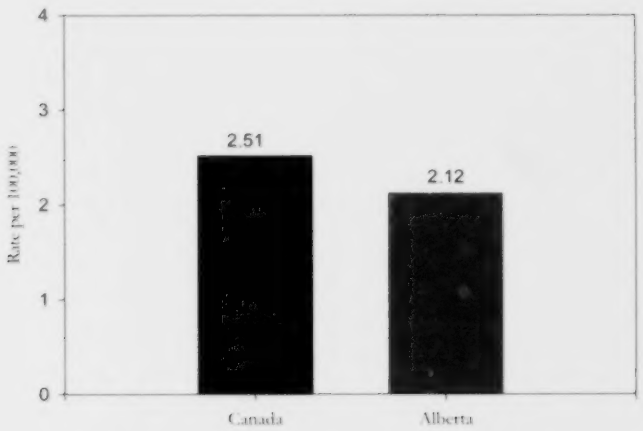
Source: Statistical Reports, STI Control, Alberta Health and Wellness, 2004-06

Infectious Syphilis

Infectious Syphilis is caused by a spirochete bacterium, *Treponema pallidum*. There are few cases of syphilis reported on an annual basis, but the consequences of delaying treatment for this STI are serious. If left untreated, syphilis can affect the fetus of a pregnant woman. Also, syphilis infections can persist over a period of years, and can attack any organ system in the body. Treatment during any stage is with antibiotics. Contact tracing is important in controlling the disease.

In 2004, the rate of diagnosed syphilis infection was 2.12 per 100,000, lower than the Canadian average of 2.51. Newfoundland and Labrador and Prince Edward Island reported no cases.

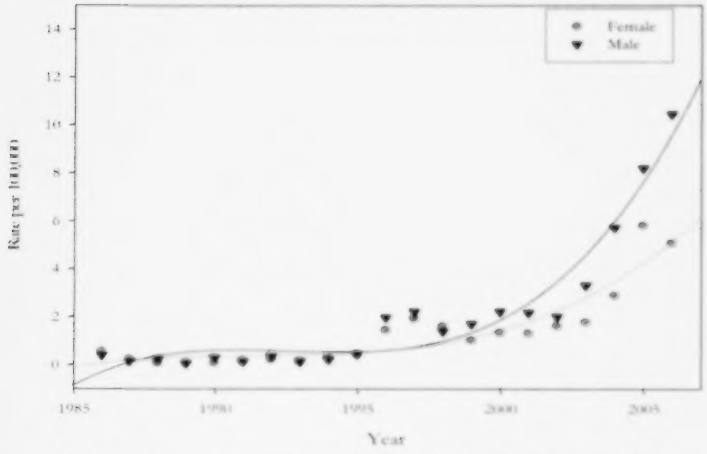
Figure 156: Incidence of Syphilis, 2004 (Canada, Alberta)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

The reported rate of syphilis infection in Alberta was low and stable between 1986 and 1995 after which it began to rise. Provincial rates of syphilis have increased more markedly in the last five years and are higher in men than in women. In 2006, the rate per 100,000 was about five for women and 10 for men.

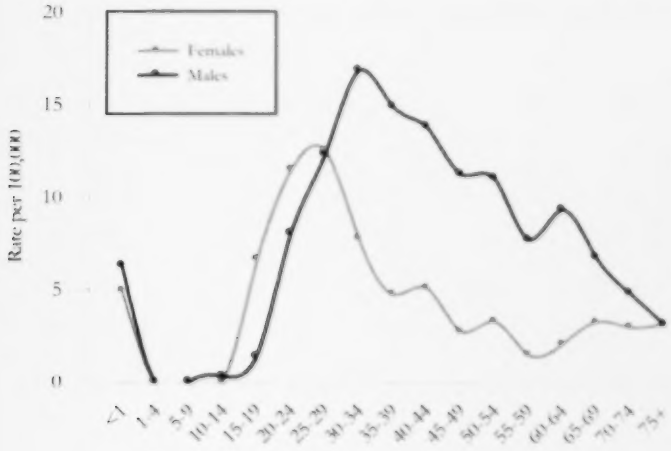
Figure 157: Incidence of Infectious Syphilis in Alberta, 1986 - 2006



Source: Statistical Reports, STI Control, Alberta Health and Wellness, 1986-2006

The highest rates for syphilis is among men aged 30 to 39, followed by women aged 20 to 29. The older group is partly explained by the fact that untreated infections have gone undetected previously (latent infections). Some of the people in the older age groups may have been infected years ago. Children infected under one year of age generally contract the infection from their mother if she has the infection.

Figure 158: Age-Specific Incidence of Syphilis in Alberta, 2004 - 2006

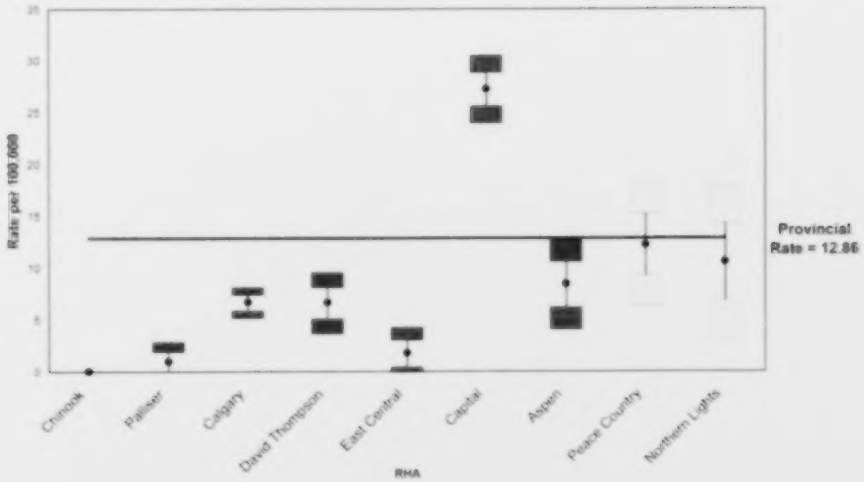


Source: Statistical Reports, STI Control, Alberta Health and Wellness, 2004-06

Rates of Infectious Syphilis are particularly higher in the Capital region of the province compared to the provincial average.

Figure 159: Regional Differences in Incidence of Infectious Syphilis, 2004 – 06

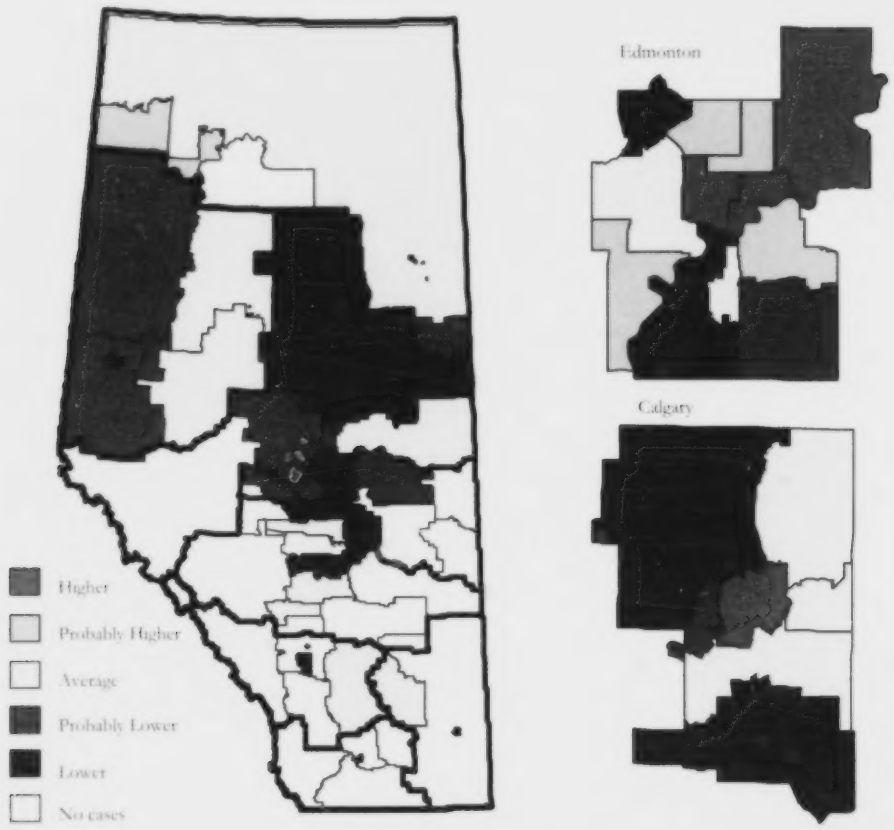




Source: Statistical Reports, STI Control, Alberta Health and Wellness, 2004-06



Figure 160: Sub-regional Differences in Incidence of Infectious Syphilis, 2004 – 06



Source: Statistical Reports, STI Control, Alberta Health and Wellness, 2004-06

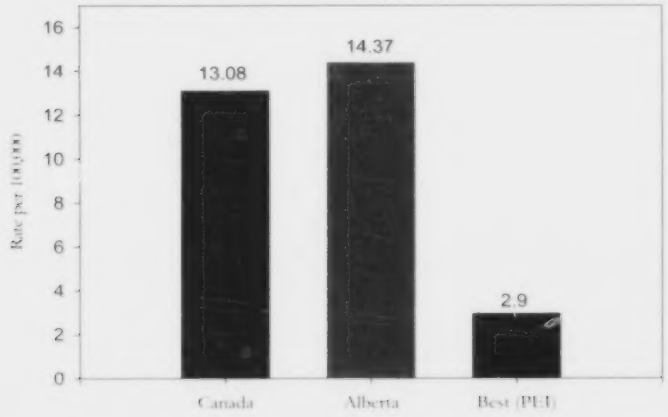
Giardiasis

Giardia lamblia is an intestinal protozoan that infects humans and other mammals. *Giardia* can persist in cyst form for months. Infection occurs from drinking contaminated water, or by person-to-person spread. Major symptoms include diarrhea, abdominal cramps and nausea. Symptoms may last for four to six weeks.

The disease is prevented in municipal water supplies through appropriate water treatment. Untreated surface water is still a common source of infection.

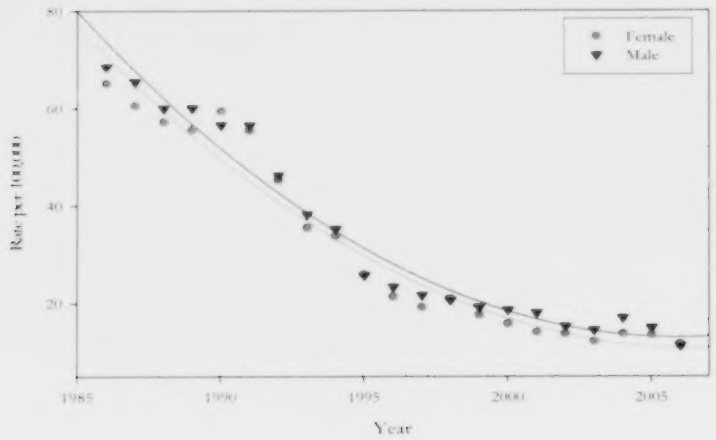
The reported rate of giardiasis has steadily declined in Alberta over the last decade. In 2004, the rate in Alberta was 14.37 per 100,000, which was slightly higher than the Canadian average of 13.08.

Figure 161: Incidence of Giardiasis, 2004 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

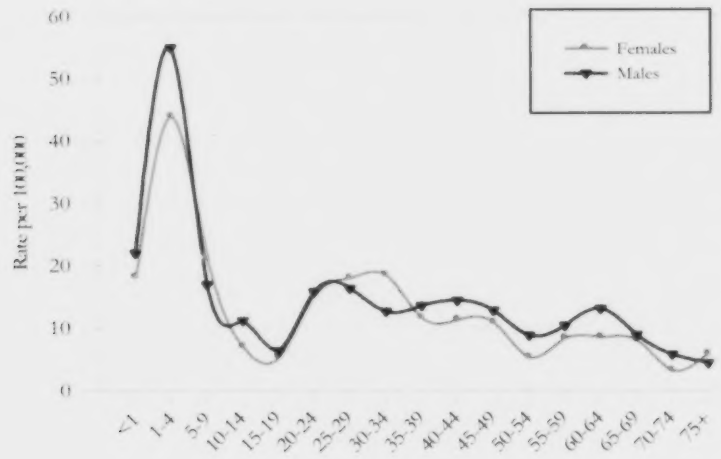
Figure 162: Incidence of Giardiasis in Alberta, 1986 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness

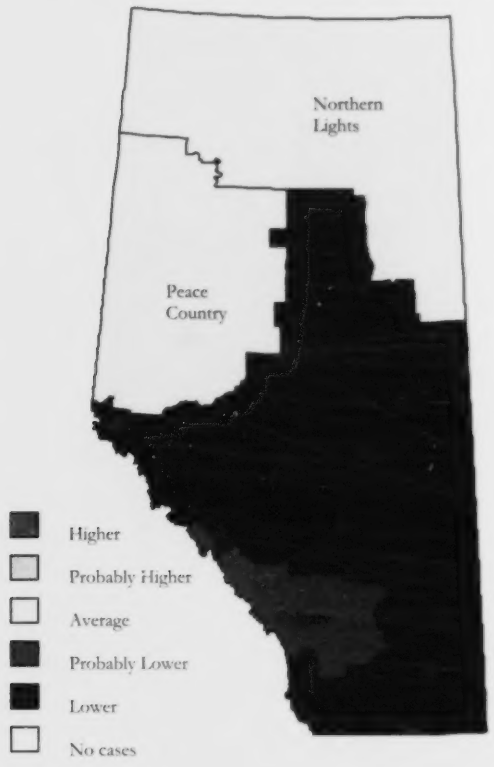
As with other enteric infections, rates are highest among children (in this case particularly among boys), where the potential for person-to-person spread is greatest. Also, children are more likely to be tested for Giardiasis as parents will take their sick children to see a physician. Adults are more likely to recover from Giardiasis without seeking medical treatment and are thus not recorded as a case.

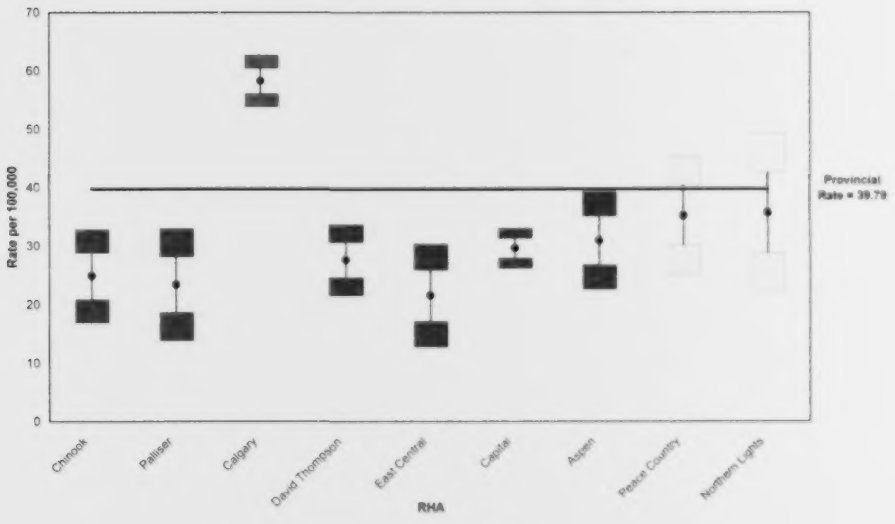
Figure 163: Age-Specific Incidence of Giardiasis in Alberta, 2004 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness

Figure 164: Regional Differences for Giardiasis, 2004 – 06

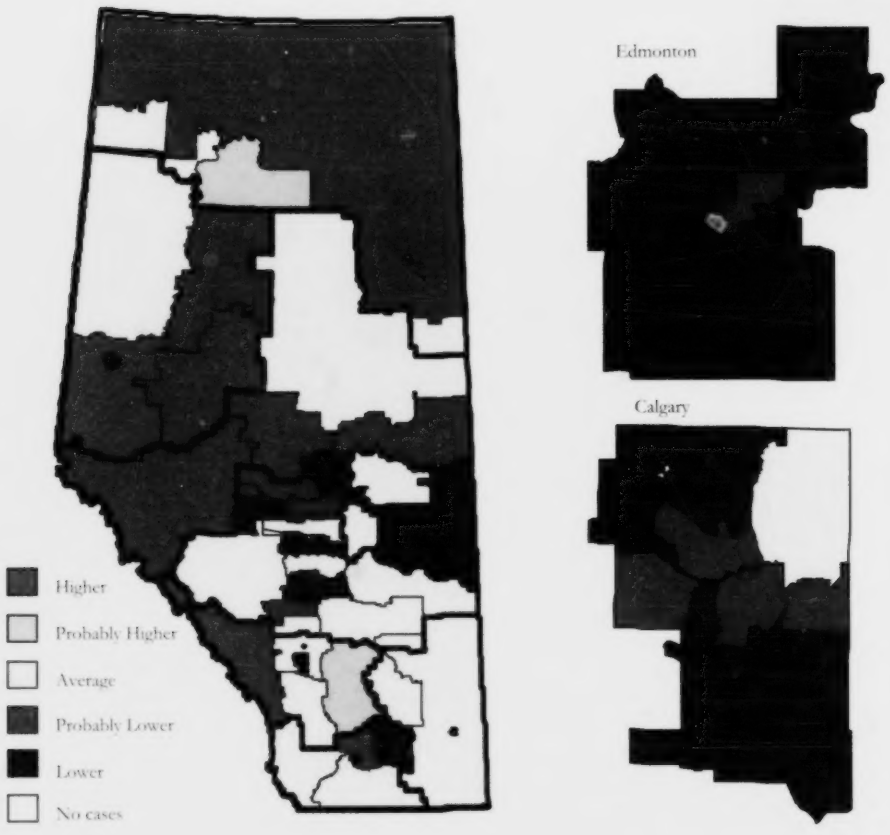




Source: Notifiable Disease Database, Alberta Health and Wellness


Aspen
Capital
East Central
David Thompson
Palliser

Figure 165: Sub-regional Differences for Giardiasis, 2004 - 06



Source: Notifiable Disease Database, Alberta Health and Wellness

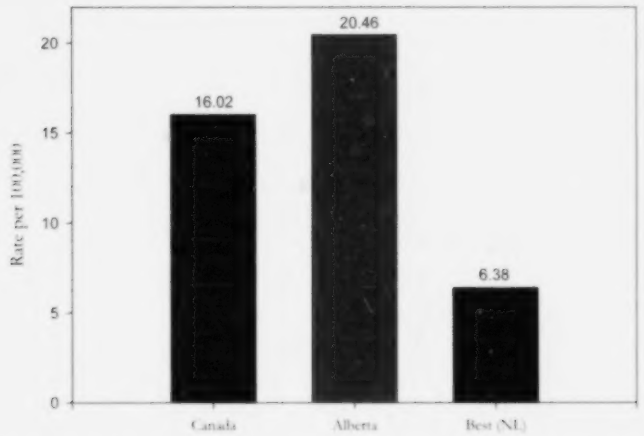
Salmonellosis

Salmonellosis is an infection caused by Salmonella bacteria. These bacteria multiply in the small intestine and invade the gut lining. Symptoms such as the sudden onset of abdominal pain, diarrhoea, nausea, fever and vomiting are common. Dehydration, especially among infants, may be severe. Treatment with antibiotics is usually reserved for these more serious infections.

Salmonella bacteria may be found in the faeces of humans and animals (wild and domestic). Salmonella is also found in food such as raw eggs and egg products, meat and meat products. Illness may occur after individuals eat food or drink water contaminated with faeces.

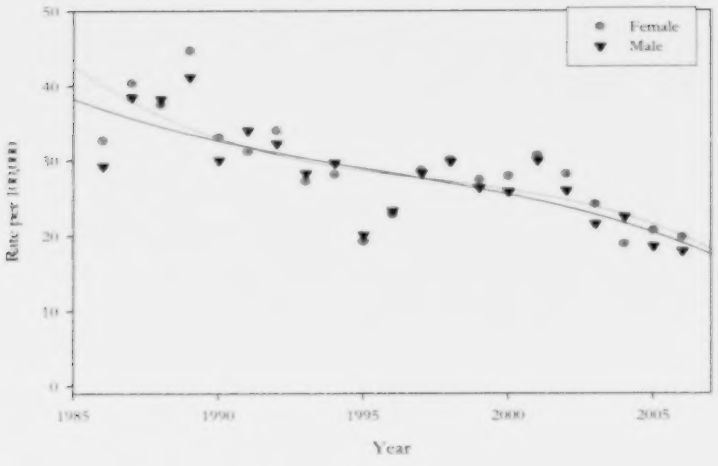
The reported rate of salmonellosis has decreased steadily during the past decade. In 2004, the Alberta rate was the highest in Canada at 20.48 per 100,000. The Canadian average was 16.02, and the lowest rate was in Newfoundland and Labrador (6.38).

Figure 166: Incidence of Salmonellosis, 2004 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

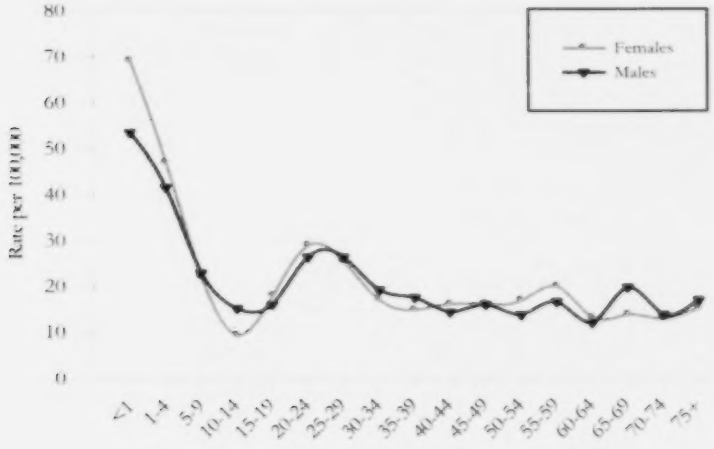
Figure 167: Incidence of Salmonellosis in Alberta, 1986 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness

As with other enteric infections, the potential for person-to-person spread is high among young children. Also, there is better reporting of enteric infections in children due to the greater likelihood of physician consults.

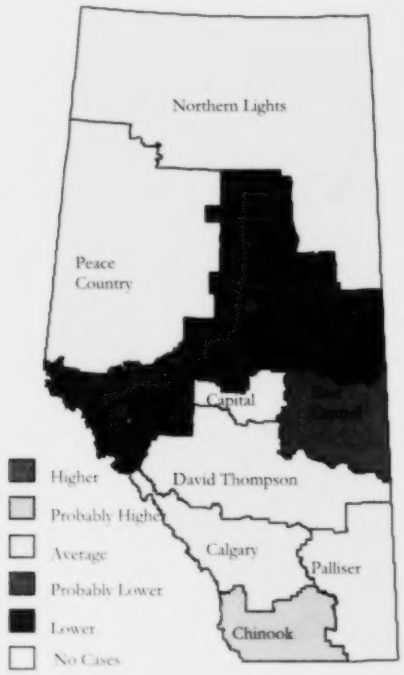
Figure 168: Age-Specific Incidence of Salmonellosis in Alberta, 2004 - 06

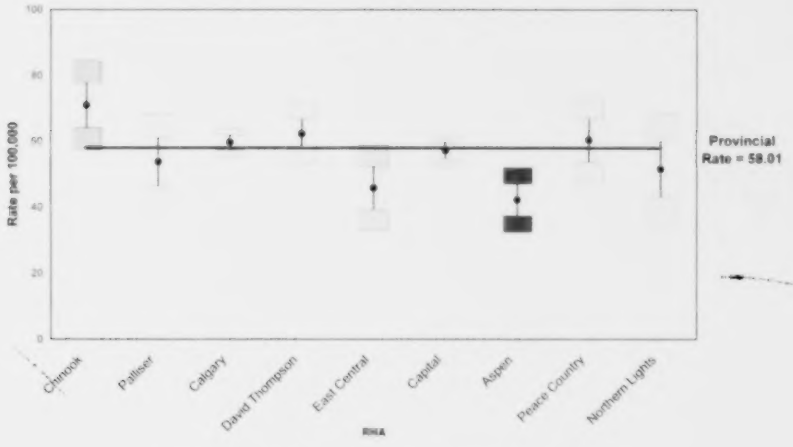


Source: Notifiable Disease Database, Alberta Health and Wellness

To help reduce the transmission of food borne illness, Alberta Health and Wellness works with other provincial departments and the federal government to develop food safety standards and practices. Cooking food thoroughly, properly refrigerating unused food, careful hand washing, and monitoring of food facility establishments will help prevent transmission.

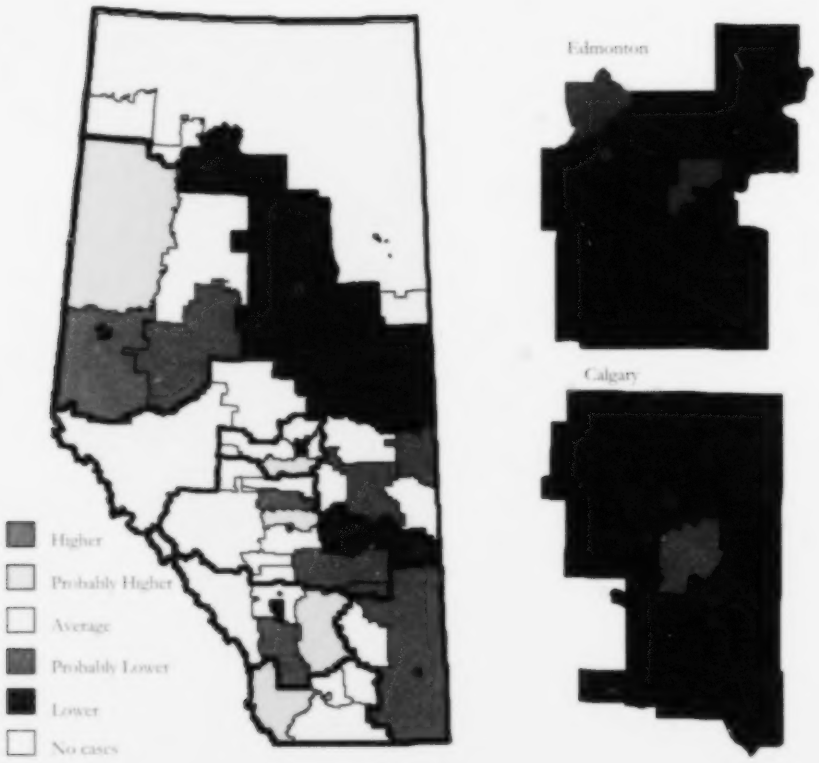
Figure 169: Regional Differences in Incidence of Salmonellosis, 2004 - 06





Source: Notifiable Disease Database, Alberta Health and Wellness

Figure 170: Sub-regional Differences in Incidence of Salmonellosis, 2004 – 06



Source: Notifiable Disease Database, Alberta Health and Wellness

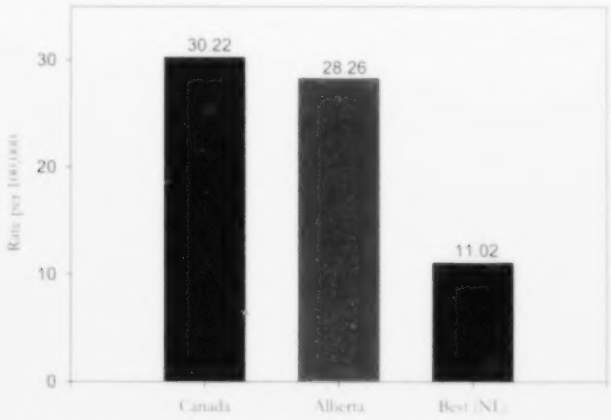
Campylobacter Enteritis

Campylobacter enteritis is an acute enteric disease caused by the *Campylobacter* bacterium. It is normally contracted by ingesting the bacteria in unpasteurized milk, in undercooked pork or chicken, or in other contaminated food and water. The disease is also passed through contact with infected pets or farm animals.

Usually lasting from two to five days, the most common symptoms of campylobacteriosis are diarrhea, abdominal pain, malaise, fever, nausea and vomiting. The most effective means of prevention are ensuring that food is thoroughly cooked, milk is pasteurized and hands are washed after contact with pets and animals.

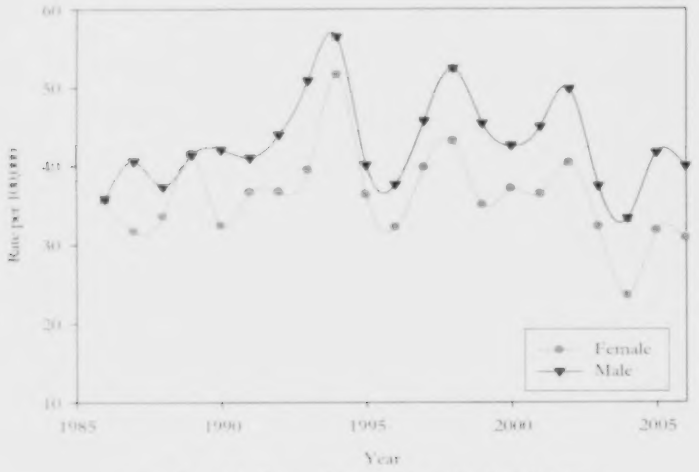
In 2004, the Alberta rate was 28.26 per 100,000, somewhat lower than the national rate of 30.22. The lowest reported rate was in Newfoundland and Labrador (11.02).

Figure 171: Incidence of Campylobacter Enteritis, 2004 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

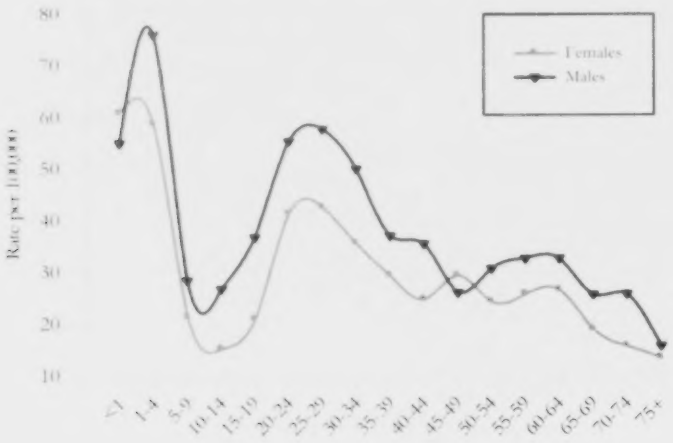
Figure 172: Incidence of Campylobacter Enteritis in Alberta, 1986 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness

Children under five and young adults have the highest rates of reported infection.

Figure 173: Age-Specific Incidence of Campylobacter Enteritis in Alberta, 2006

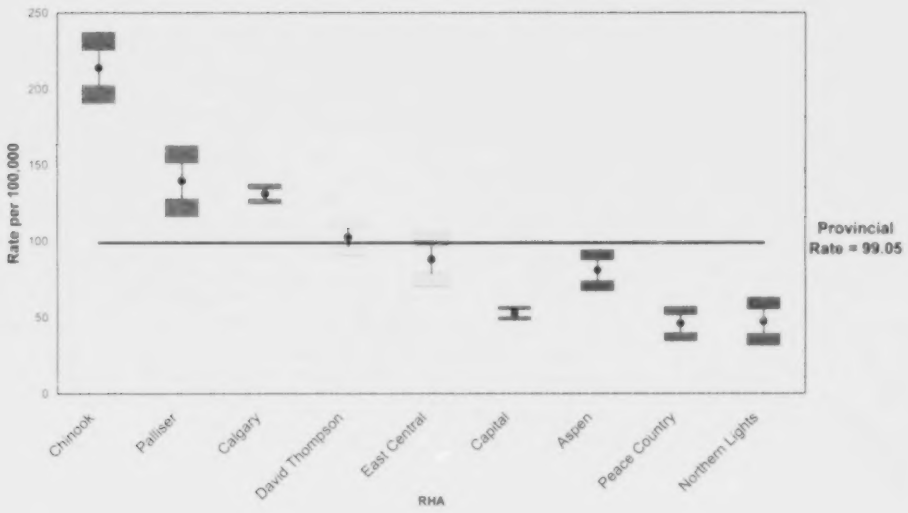


Source: Notifiable Disease Database, Alberta Health and Wellness

The southern part of the province had higher rates than the provincial average for Campylobacter Enteritis from 2004 to 2006.

Figure 174: Regional Differences for Campylobacter Enteritis, 2004-06

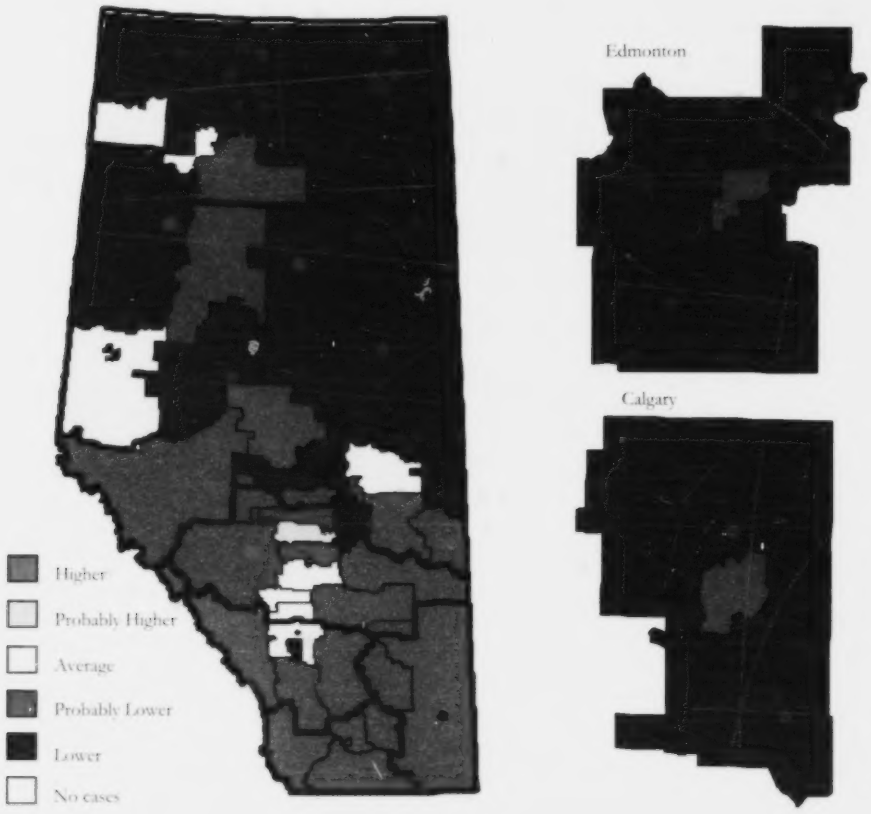




Source: Notifiable Disease Database, Alberta Health and Wellness


Northern
Lights
Peace
Country
Aspen

Figure 175: Sub-regional Differences for Campylobacter Enteritis, 2004-06



Source: Notifiable Disease Database, Alberta Health and Wellness

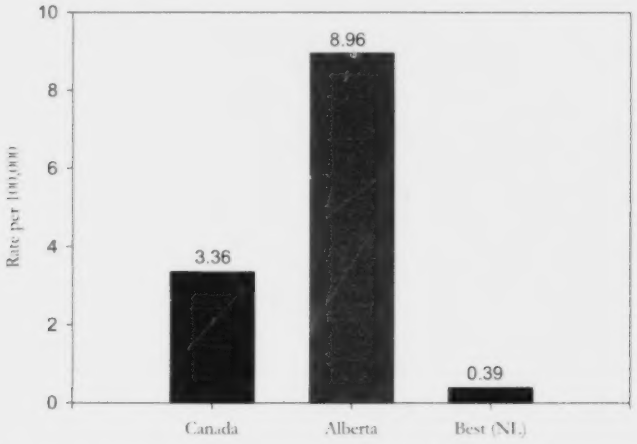
E. coli O157:H7

Escherichia coli (E. coli) are bacteria that normally exist in the colon without causing any disease. Some strains, however, produce gastrointestinal illness. Certain strains, most commonly O157:H7, produce toxins that cause severe gastroenteritis and possibly hemolytic uremic syndrome (HUS). HUS, most common in young children, can cause permanent vascular and kidney damage and can be fatal.

The presence of *E. coli* O157:H7 in milk, meat products or water usually results from fecal contamination of these products. Undercooked hamburger has been the most commonly implicated food associated with the infection.

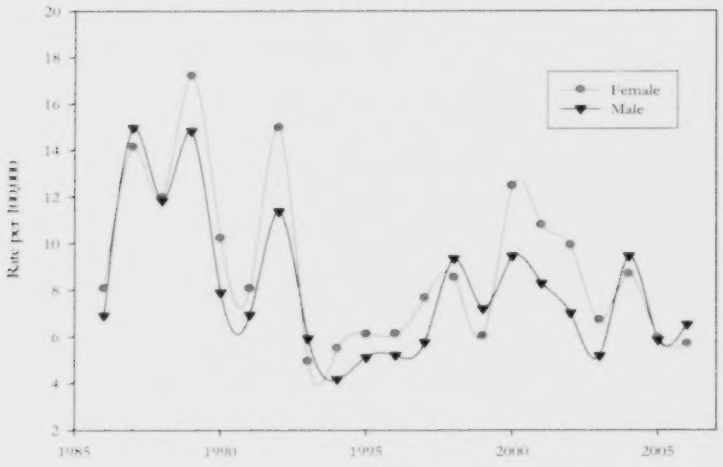
In 2004, the Alberta rate was 8.96 per 100,000, higher than the Canadian average and much higher than Newfoundland and Labrador at 0.39. Unlike other jurisdictions, most cases in Alberta occur as sporadic events rather than as part of an outbreak. Reported rates show a decrease in the rate of *E. coli* O157:H7 over the last 10 years.

Figure 176: Incidence of *E. coli* O157:H7, 2004 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

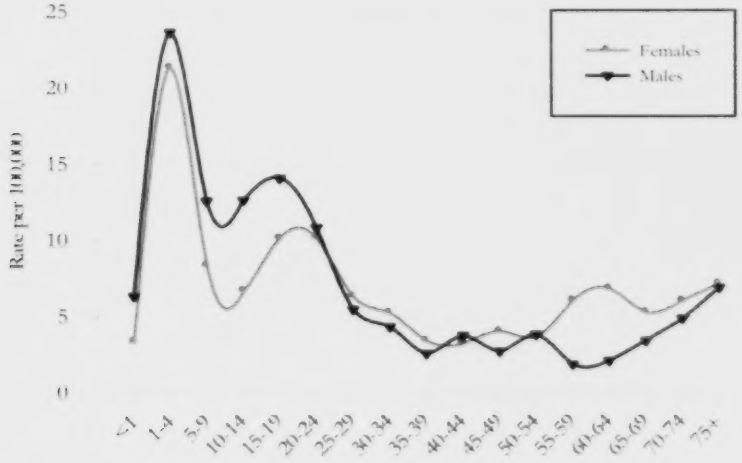
Figure 177: Incidence of *E. coli* O157:H7 in Alberta, 1986 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness

As with other enteric infections, young children have the highest reported rates due to greater chance of seeing a physician for illness.

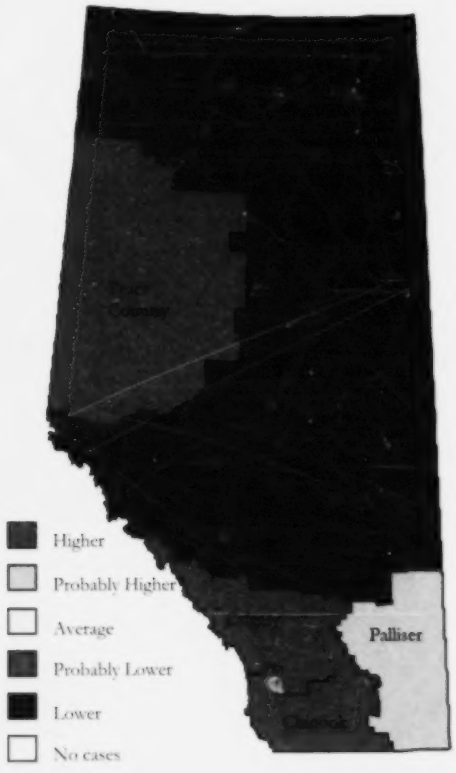
Figure 178: Age-Specific Incidence of *E. coli* O157:H7 in Alberta, 2006

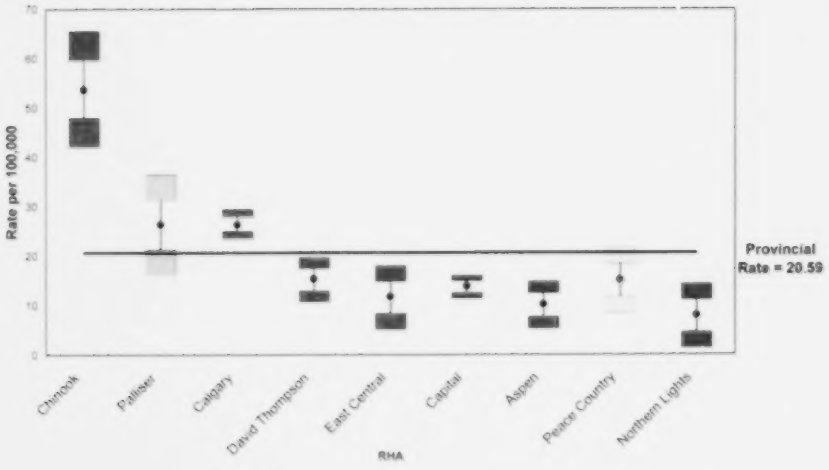


Source: Notifiable Disease Database, Alberta Health and Wellness

The southern part of the province had higher rates than the provincial average for E. coli 0157:H7 from 2004 to 2006.

Figure 179: Regional Differences in Incidence of *E. coli* O157:H7, 2004-06

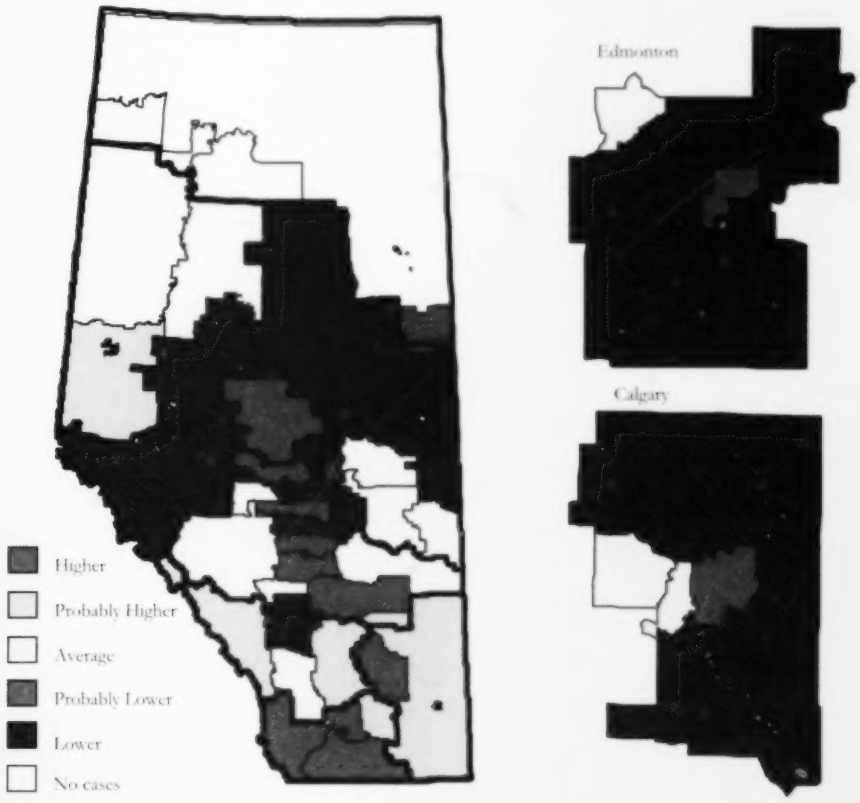




Source: Notifiable Disease Database, Alberta Health and Wellness


Northern Lights
Aspen
Capital
East Central
David Thompson

Figure 180: Sub-regional Differences in Incidence of *E. coli* O157:H7, 2004-06



Source: Notifiable Disease Database, Alberta Health and Wellness

West Nile Virus

West Nile Virus (WNV) is a virus that is carried by several species of birds in North America. Mosquitoes that bite an infected bird become carriers of the virus that can then pass it on to other animals and people. WNV virus is mainly transmitted to people from the bite of an infected mosquito. Other less common forms of transmission are through blood transfusions, organ donations, and through breast milk. So far there is no evidence that the virus can pass from animals to people directly. Nor can it be passed between people via saliva or physical contact.

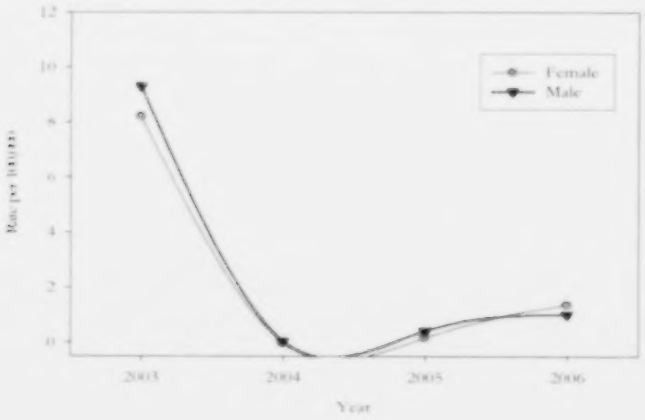
West Nile virus is most common in mosquito species that feed on birds such as *Culex pipiens, Culex restuans* and *Culex tarsalis.*

Most people who are infected with the virus do not get seriously ill and may have symptoms ranging from mild to no symptoms. A small proportion of infected people will experience a more severe illness ranging from malaise and fever to serious neurological conditions such as meningitis, encephalitis and acute flaccid paralysis. These conditions can cause permanent neurological damage and can be fatal.

WNV was first detected in Canada in 2001, and the first human cases of WNV in Alberta were found in 2003 with 275 cases. Since then surveillance activities to monitor WNV have increased across Canada.

In 2006, clinical WNV cases were reported in Alberta (40), Saskatchewan (19), Manitoba (50), Ontario (42), and Quebec (1). Most cases in Alberta are found in the southern part of the province. *SOURCE: West Nile Virus MONITOR, Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005.* Cases found in other parts of the province are usually travel related. The provincial rate is so low that sub-region comparisons are unstable and not provided in a map.

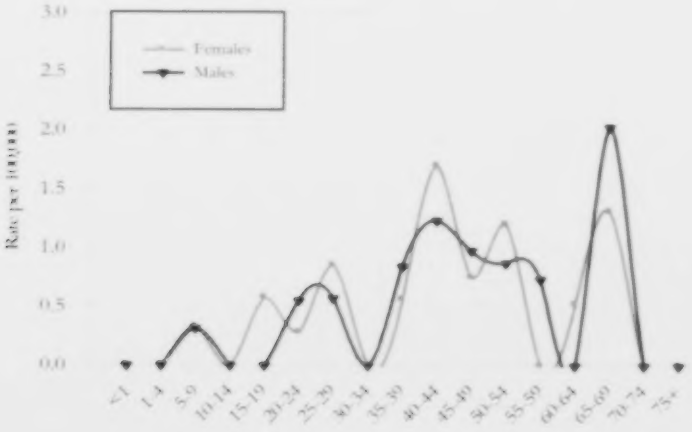
Figure 181: Incidence of West Nile Virus in Alberta, 2003 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness

WNV infection can occur at any age and people who spend much time outdoors during the summer months, especially during dawn and dusk when mosquitoes are most active, have a higher risk of being bitten by an infected mosquito.

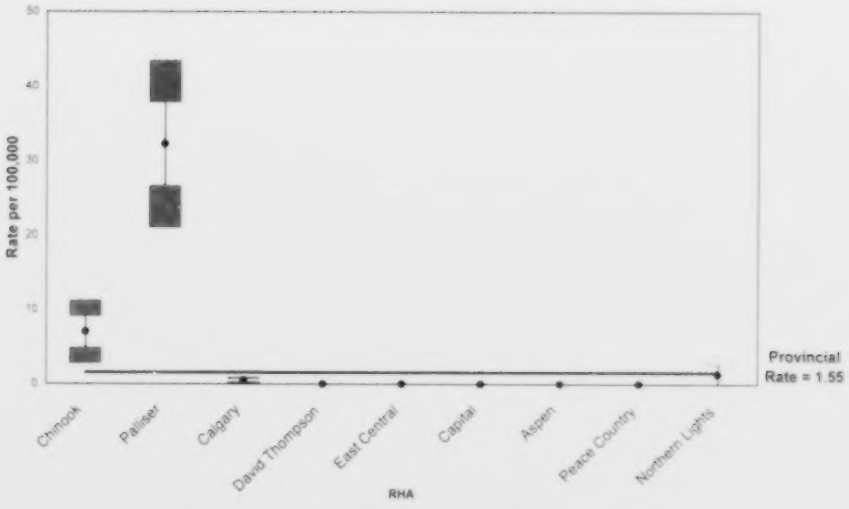
Figure 182: Age-Specific Incidence of West Nile Virus in Alberta, 2004 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness

Figure 183: Regional Differences in Incidence of West Nile Virus, 2004 - 06





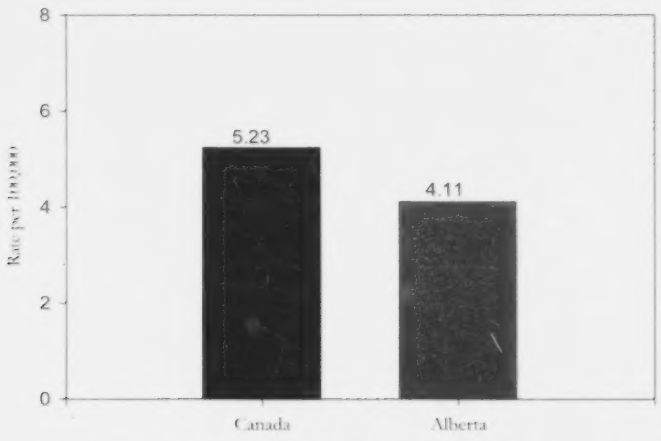
Source: Notifiable Disease Database, Alberta Health and Wellness

Tuberculosis

Tuberculosis, or TB, is a disease caused by the *Mycobacterium tuberculosis* bacterium. The disease can damage the lungs and other organs. It is transmitted though the air, from one person to another. Canada has one of the lowest rates of TB in the world; however there are certain high-risk groups, including Aboriginal peoples, foreign-born residents from countries with a high prevalence of TB, disadvantaged inner-city populations, and people living in crowded conditions.

The most recent comparable national data are from 2002 where the Alberta rate was 4.11 per 100,000, which was lower than the Canadian average of 5.23. Prince Edward Island reported no cases that year.

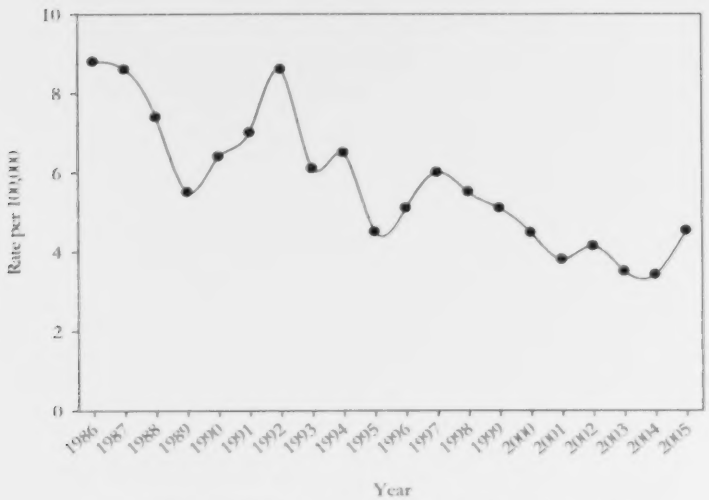
Figure 184: Incidence of Tuberculosis, 2002 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

Tuberculosis was once a major cause of death in Alberta. Diligent contact tracing, treatment protocols, and monitoring have largely controlled the disease. The current rates of infection in Alberta are about five per 100,000 population.

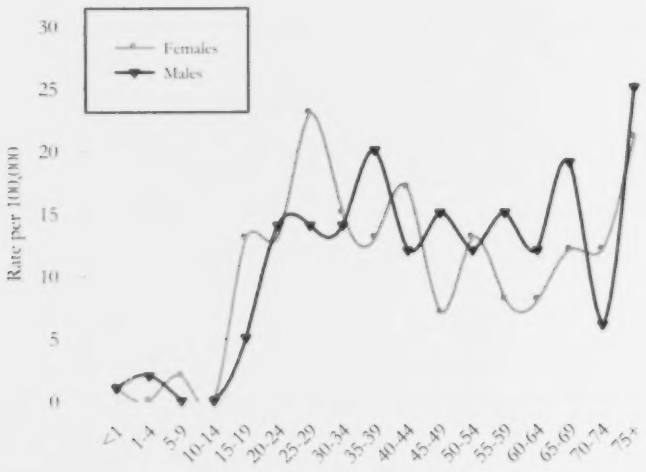
Figure 185: Incidence of Tuberculosis in Alberta, 1986 - 2005



Source: Tuberculosis Database, Alberta Health and Wellness, 1986 - 2005

Not everyone who comes in contact with these bacteria develops the active disease; some may have an inactive infection that remains dormant for many years. The disease can become active if the immune system is weakened. Infants and young children, women during their childbearing years and especially male seniors have higher rates of active disease.

Figure 186: Age-Specific Incidence Rates for Tuberculosis in Alberta, 2004 - 06



Source: Tuberculosis Database, Alberta Health and Wellness, 2004-06

Hepatitis C

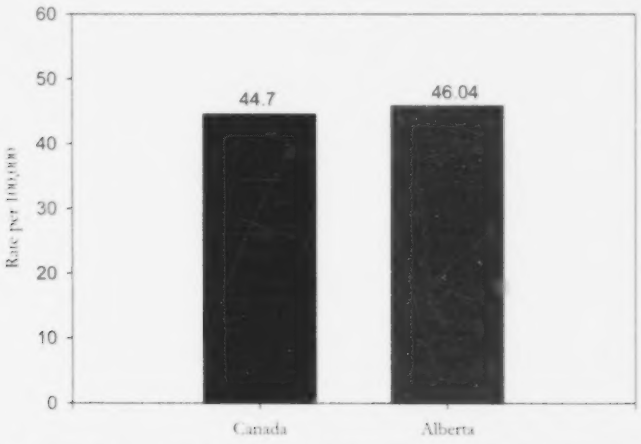
Hepatitis C virus (HCV) was recognized as a disease in 1989. It is a blood borne pathogen that causes inflammation of the liver that can progress to cirrhosis. Many people who contract the virus have no symptoms until substantial damage to their liver has already occurred (up to 20 to 30 years in some cases). During this time they may unknowingly pass the virus on to others.

HCV is transmitted through contact with infected blood (through such means as sharing needles for injection drug use, or by blood splashes to the eyes or mucous membranes); or from an infected mother to her baby at birth. Tattooing and body piercing have also been implicated. Although less common, the virus can be transmitted through sexual contact with an infected partner.

Most people are at low risk for contracting HCV, but injection drug users (who share needles), health care workers (who are at risk for needlestick injuries), and people with multiple sex partners are at increased risk. Currently, there is no vaccine or cure for HCV. Treatment usually involves a combination of the drugs interferon and ribavirin.

In 2004, the incidence rate per 100,000 population in Alberta was 46.04 per 100,000, higher than the Canadian average of 44.7. Saskatchewan and Nova Scotia reported no cases in 2004.

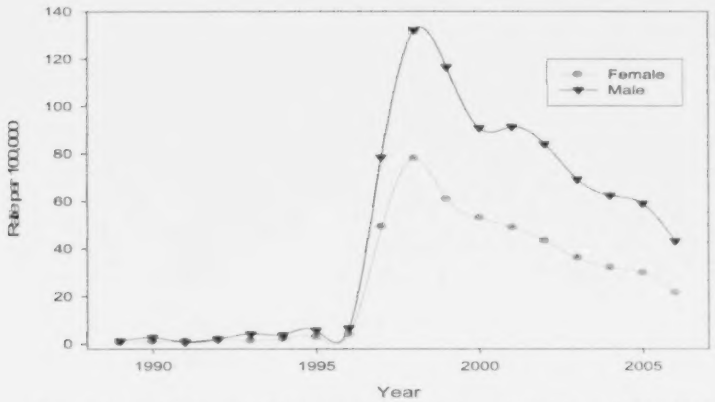
Figure 187: Incidence of Hepatitis C, 2004 (Canada and Alberta)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

An increase in the use of laboratory-testing for HCV has resulted in a substantial increase in the number of cases, representing both new cases (where the infection has been recently acquired) and chronic cases (where the infection has been present for several months or years). Accordingly, these numbers should be used with caution for identifying outbreaks, monitoring trends in incidence, and patterns in age specific incidence. The results presented in the graph are thus descriptive only.

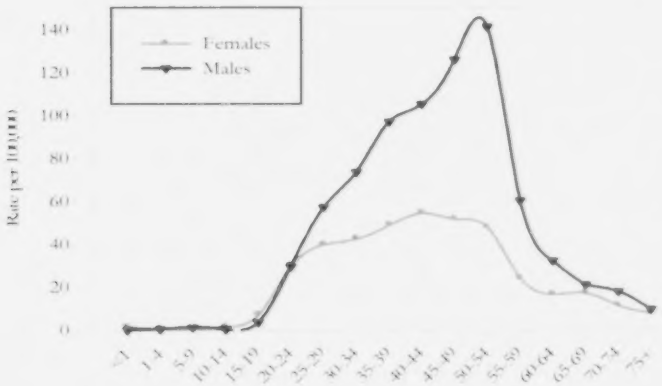
Figure 188: Incidence of Hepatitis C in Alberta, 1986 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness, 1989 - 2006

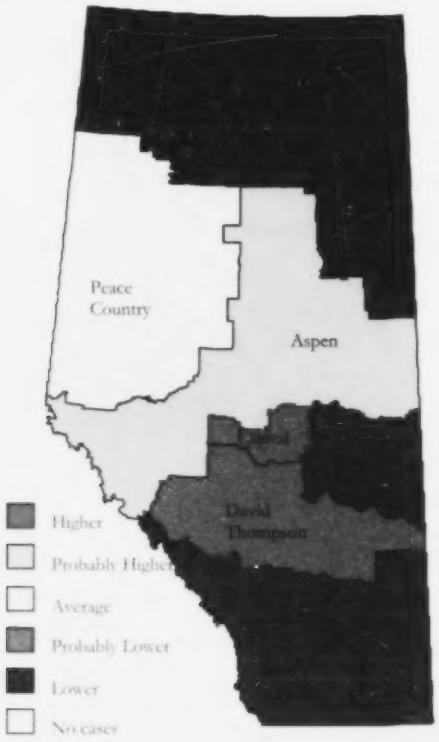
From 2004-06, the highest incidence of HCV was found in males between 30 and 55 years of age. The rates in women are also highest during the same age range, but are lower than men.

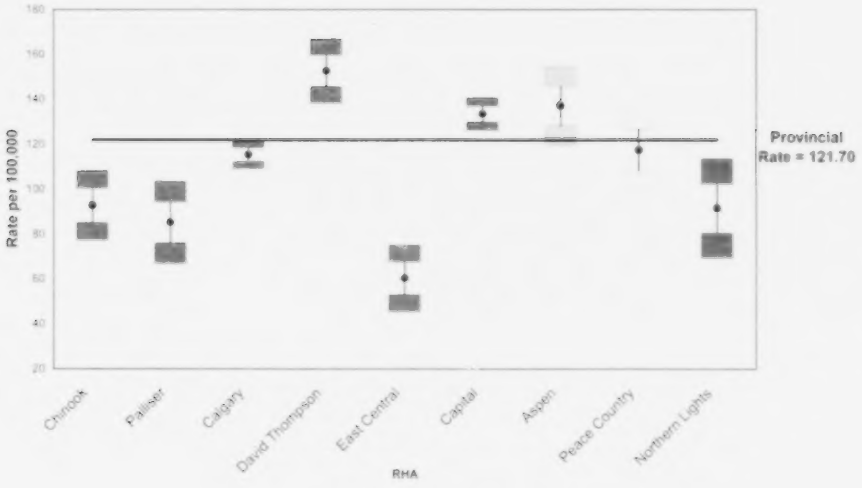
Figure 189: Age-Specific Incidence of Hepatitis C in Alberta, 2004 - 06



Source: Notifiable Disease Database, Alberta Health and Wellness, 2004-06

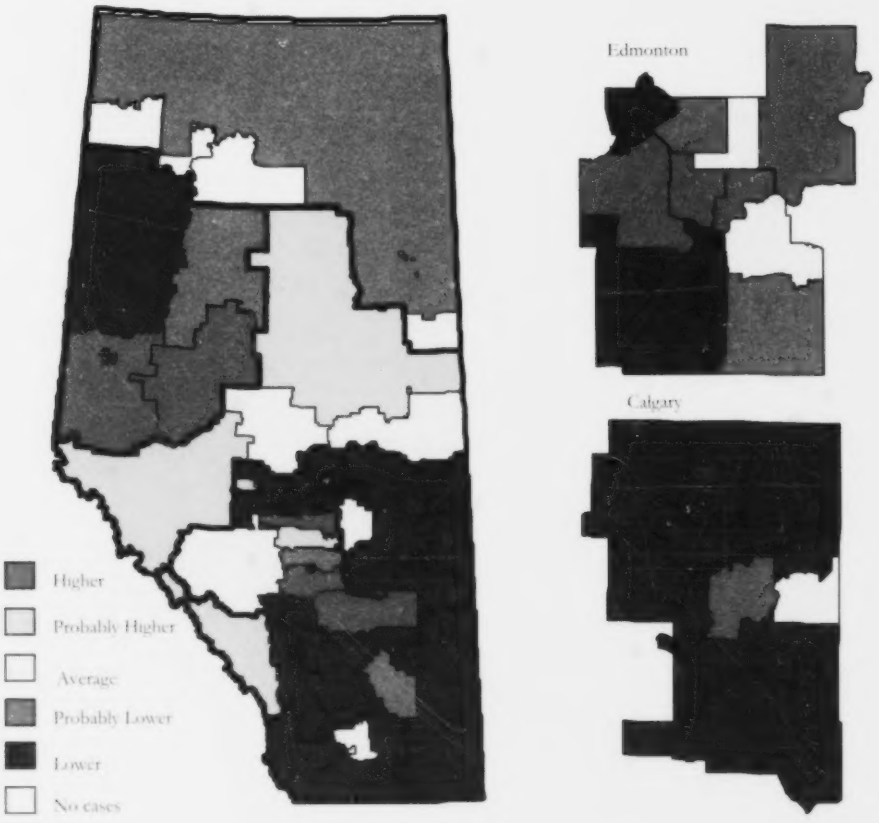
Figure 190: Regional Differences for Incidence of Hepatitis C, 2004 - 06





Source: Notifiable Disease Database, Alberta Health and Wellness, 2004-06

Figure 191: Sub-regional Differences for Incidence of Hepatitis C, 2004 – 06



Source: Notifiable Disease Database, Alberta Health and Wellness, 2004-06

Measles

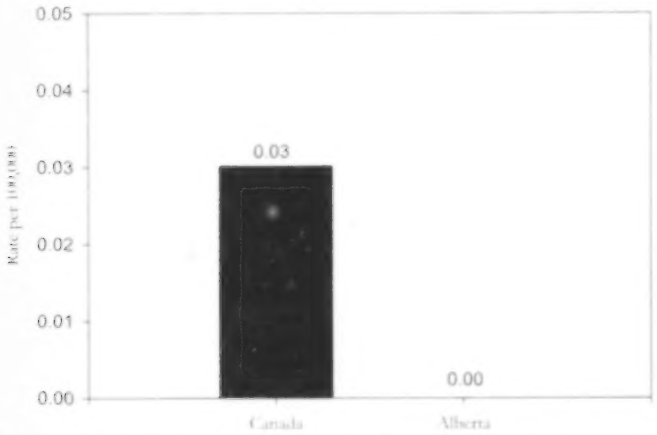
Measles is an acute, highly contagious disease caused by the measles virus. Major symptoms are a high fever, sore eyes, cough, cold-like symptoms and red rash lasting four to seven days.

Pneumonia occurs in up to six per cent of reported cases and accounts for 60 per cent of deaths attributed to measles. Other complications include middle ear infection, convulsions and encephalitis.

Measles is acquired by breathing the same air as an infected person or through direct contact with nasal or throat secretions. It is preventable with measles vaccine and permanent immunity is acquired after contracting the disease.

In 2004, the Alberta rate was zero per 100,000, and the Canadian average was 0.03. No cases were reported in several other provinces.

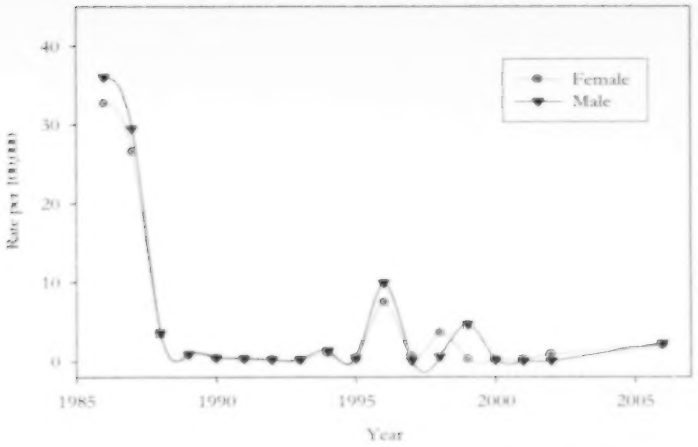
Figure 192: Incidence of Measles, 2004 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

The rate of measles has decreased during the past two decades to very low levels, but outbreaks are possible with a single-dose vaccine schedule (Alberta introduced a two-dose schedule in 1996). The graph shows years of small outbreaks in late 1990s.

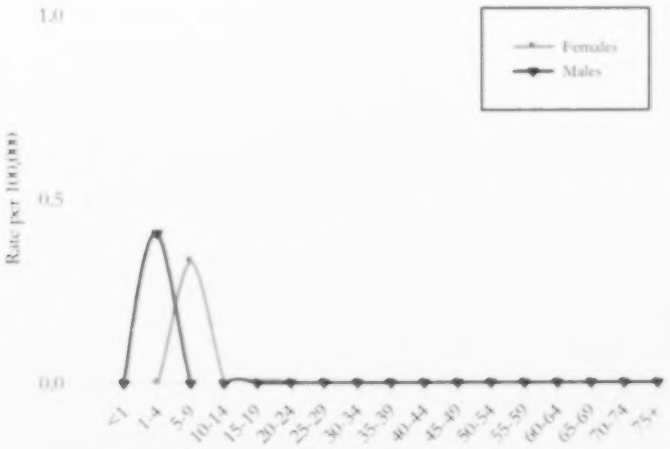
Figure 193: Incidence of Measles in Alberta, 1986 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness, 1986 - 2006

Measles is most prevalent among school aged children, but can occur at any age. The average age of infection has increased since the advent of measles immunization programs.

Figure 194: Age-Specific Incidence of Measles in Alberta, 2004 - 06



Source: Notifiable Disease Database, Alberta Health and Wellness, 2004 - 06

No regional maps have been included for measles due to so few reported cases in the last three years.

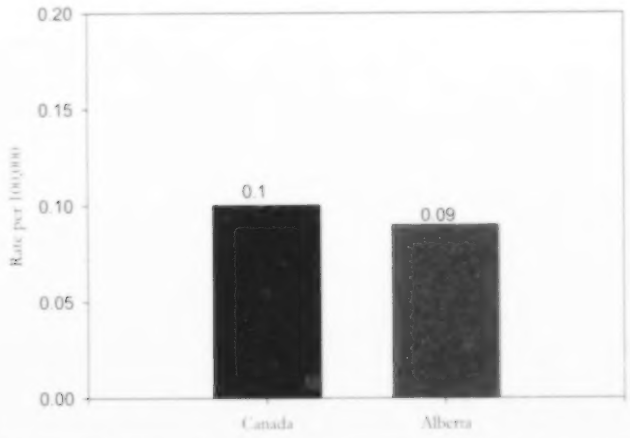
Mumps

Mumps is a disease affecting primarily school-aged children. The virus can infect many parts of the body, especially the parotid and other salivary glands. Parotid swelling is associated with fever, headache and loss of appetite. Infections frequently occur without any symptoms being present.

Internal organs can be involved. Males may develop orchitis, a painful inflammation of the testicles. Mumps in females may affect the ovaries, causing pain and tenderness in the abdomen. It is a cause of viral meningitis. Other organs can also be involved.

In 2004 Alberta's reported rate for mumps (0.09 per 100,000) was similar to the national average of 0.1. No cases were reported in NL, P.E.I., NB, NS, and QC.

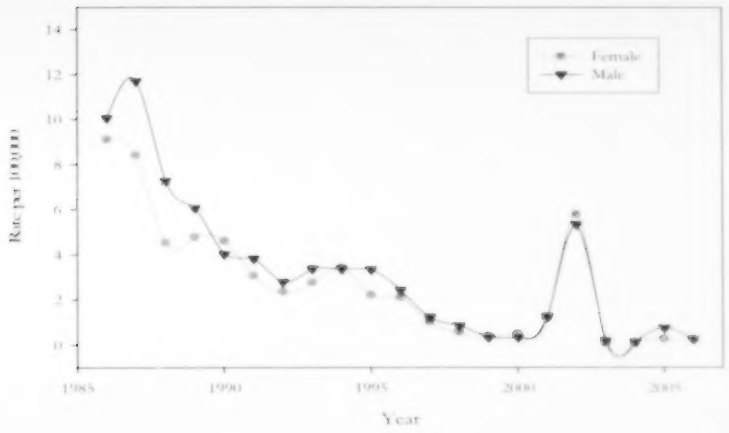
Figure 195: Incidence of Mumps, 2004 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

The rate of mumps infections has declined steadily in Alberta over the last two decades. In 2002, there was a mumps outbreak that then dropped in the following years.

Figure 196: Incidence of Mumps in Alberta, 1986 - 2006

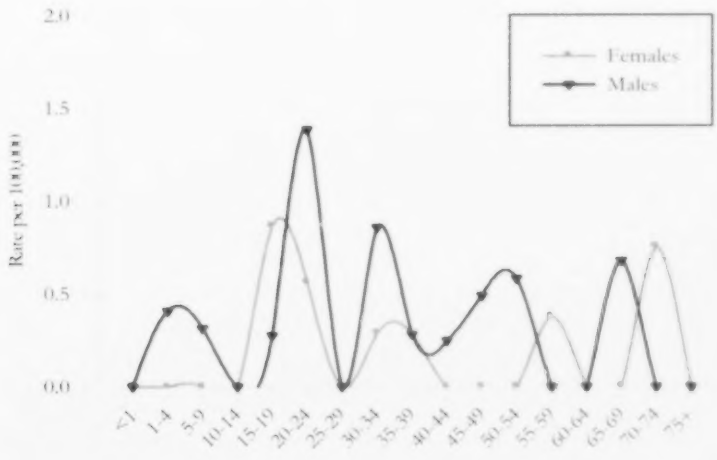


Source: Notifiable Disease Database, Alberta Health and Wellness, 1986 - 2006

Immunity to mumps can be conferred by vaccine, usually administered as part of the measles-mumps-rubella (MMR) immunizations.

Symptomatic mumps infection is rare in children younger than two years, but more likely to be reported for children aged five to 14. From 2004 to 2006 there was the odd case of mumps infection in most age categories, however rates were very low.

Figure 197: Age-Specific Incidence of Mumps in Alberta, 2004 - 06



Source: Notifiable Disease Database, Alberta Health and Wellness, 2004-06

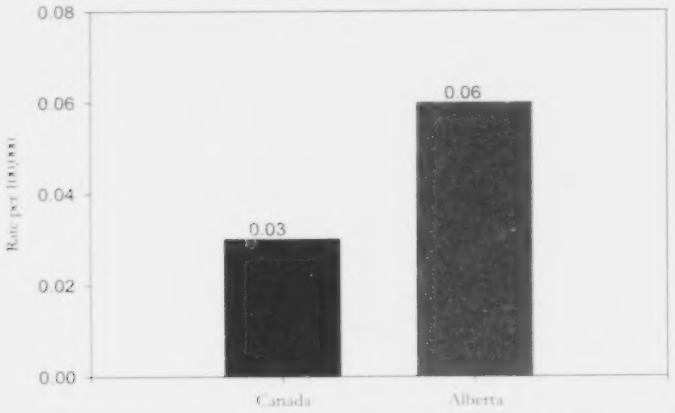
The regional maps are not provided as there are too few cases to calculate stable rate estimates.

Rubella

Rubella, or German measles, is a generally mild infection in children. It causes swollen glands behind the ears and back of the neck, followed by a short-lived rash. The virus is transmitted through droplets in the air, through close personal contact and from a pregnant woman to her unborn child.

Infection during the first trimester of pregnancy can lead to congenital rubella syndrome (CRS) in up to 85 per cent of the babies of these mothers. These babies may be born with congenital heart disease, low birth weight, deafness, blindness, mental retardation and other neurological defects.

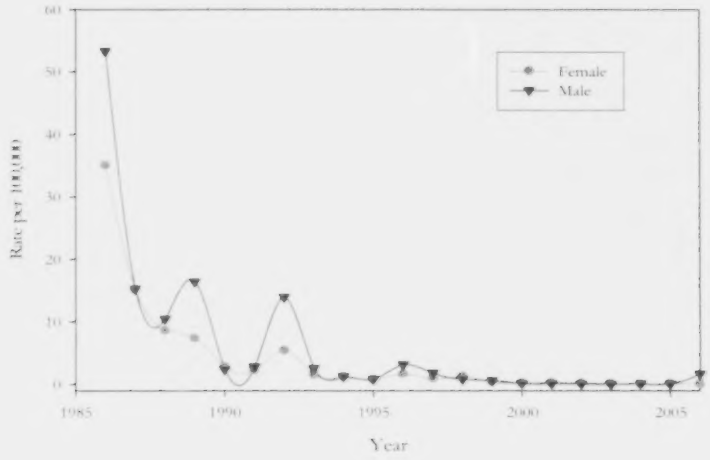
Figure 198: Incidence of Rubella, 2004 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2006

The reported rate of rubella infections in Alberta has decreased in the last few years. The 2004 Alberta rate of 0.06 per 100,000 was higher than the national average of 0.03, and several other provinces had no reported cases that year. The rate of CRS in Alberta has been significantly reduced due to effective immunization and pre-natal screening.

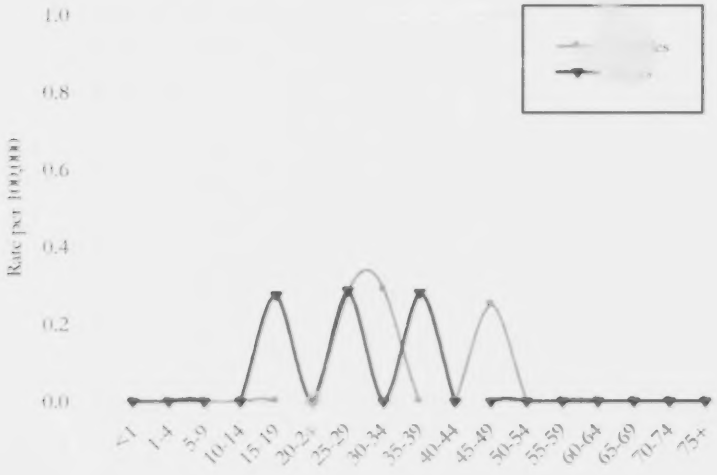
Figure 199: Incidence of Rubella in Alberta, 1986 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness, 1986 - 2006

Initially, immunization strategies were targeted at females only and for this reason, males historically had higher infection rates. Now, both males and females are immunized.

Figure 200: Age-Specific Incidence Rates for Rubella in Alberta, 2004 - 06



Source: Notifiable Disease Database, Alberta Health and Wellness, 2004-06

Hepatitis B

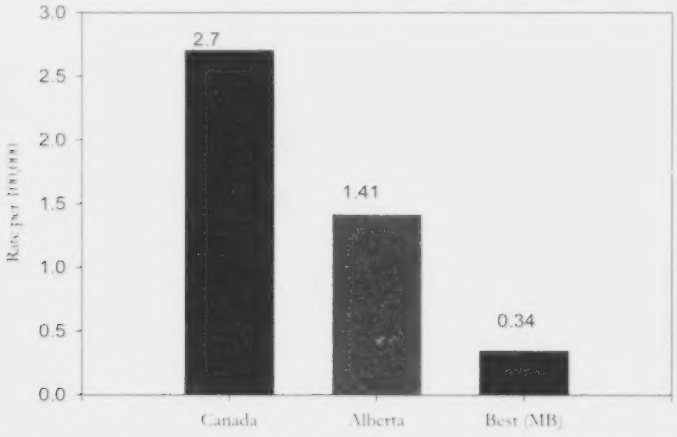
Hepatitis B virus (HBV) is a bloodborne pathogen that causes inflammation of the liver. The following symptoms may slowly emerge anywhere from 40 to 180 days after contracting the virus: lack of appetite, rash, stomach pain, nausea and vomiting, often followed by jaundice. Many people who are infected will have no symptoms.

Hepatitis B is transmitted through sexual contact; contact with infected blood (through such means as sharing needles for injection drug use, or by blood splashes to the eyes or mucous membranes); or from an infected mother to her baby at birth. Tattooing and body piercing have also been implicated. About five per cent of people with hepatitis B become carriers and can spread the disease for a lifetime. A significant proportion of carriers will go on to develop chronic active hepatitis and cirrhosis. High risk groups are routinely immunized for hepatitis B.

The rate of hepatitis B in Alberta has declined slightly during the past decade. In 2004, it was 1.41 per 100,000, lower than the Canadian average of 2.7 but still above Manitoba, at 0.34. (It should be noted that many cases of HBV infection represent cases acquired years previous to testing).

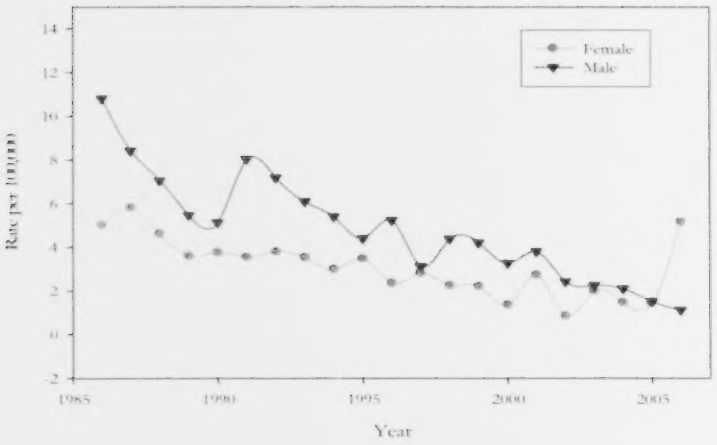
The rates labeled incidence include chronic carriers who received a laboratory test for some reason. Most of these are likely to be completely healthy.

Figure 201: Incidence of Hepatitis B, 2004 (Canada, Alberta, Best Province)



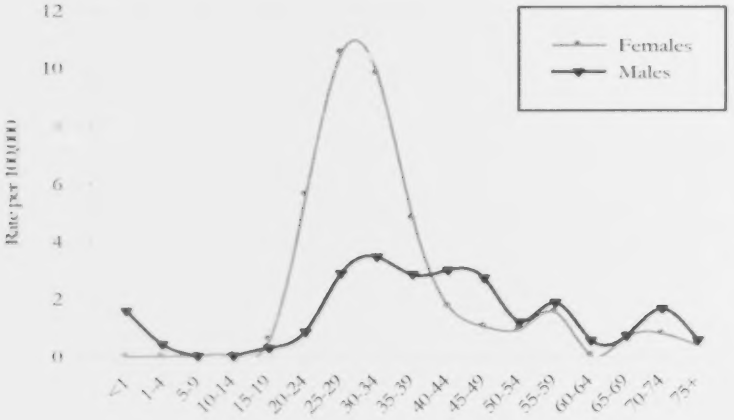
SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

Figure 202: Incidence of Hepatitis B in Alberta, 1986 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness, 1986 - 2006

Figure 203: Age-Specific Incidence of Hepatitis B in Alberta, 2004 - 06



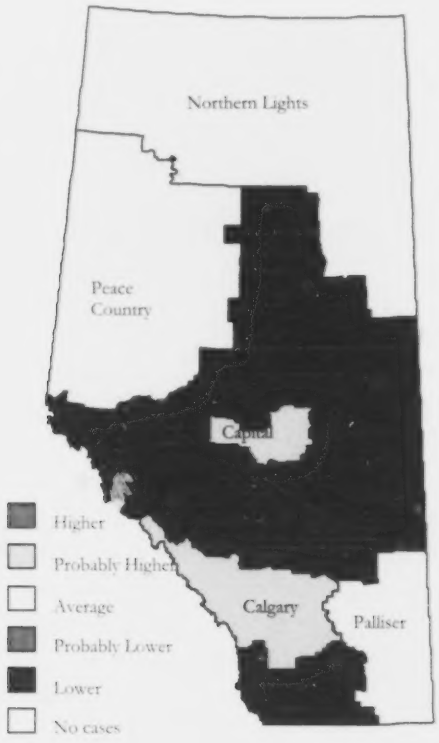
Source: Notifiable Disease Database, Alberta Health and Wellness, 2004-06


Nadi
East Central
Deuba Evangelical
Suva

A look at the regional map shows that no region had a significantly higher incidence than the provincial average, however the Capital and Calgary regions may have a higher rate. Aspen, East Central, David Thompson, and Chinook had lower incidence rates than the provincial average.

Provincial rates are so low that sub-regional comparisons are unstable and not presented in a map.

Figure 204: Regional Differences in Incidence of Hepatitis B, 2004 – 06

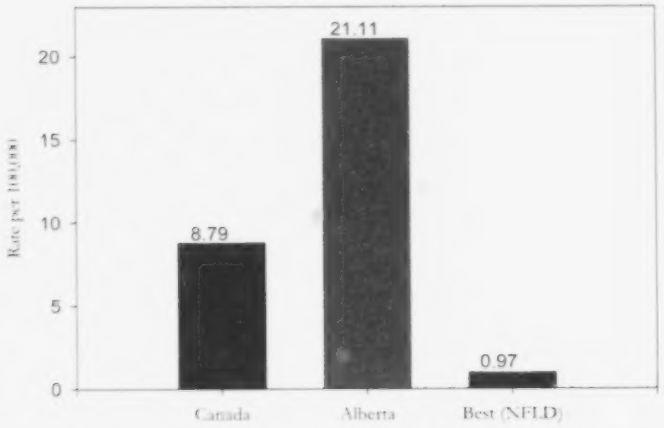


Pertussis

Pertussis, or whooping cough, is highly contagious. It is caused by the *Bordetella pertussis* bacterium, found in the mouth, nose and throat of an infected person. It gets its common name from the paroxysmal coughing which is followed by forced inspiration.

In 2004, the rate of pertussis in Alberta was the second highest in Canada at 21.11 per 100,000, much higher than the Canadian average of 8.79 and Newfoundland and Labrador at 0.97. The higher rate in Alberta was due to several outbreaks.

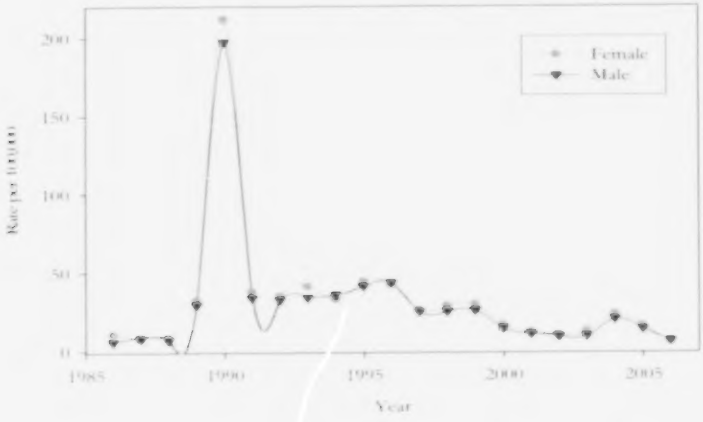
Figure 205: Incidence Rate for Pertussis, 2004 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

The rate of pertussis in Alberta has decreased slightly from 1991 to 2006, (following a major outbreak in 1990). The single most effective control measure is maintaining the highest possible level of immunization. An improved vaccine with fewer side effects was introduced in 1997. It is given at two, four, six and 18 months of age, and again between four and six years of age.

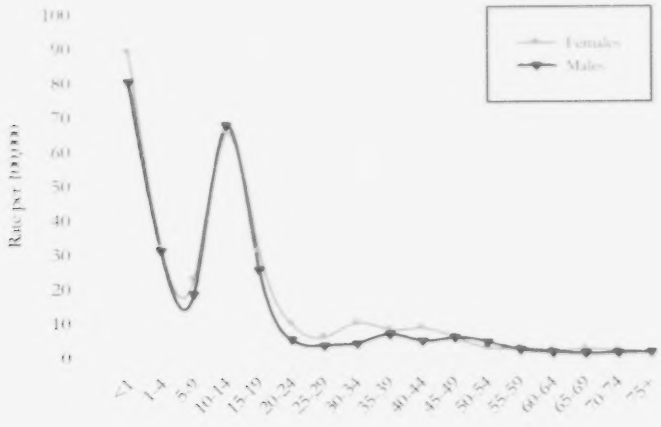
Figure 206: Trends in Incidence Rate for Pertussis in Alberta, 1986 - 2006



Source: Notifiable Disease Database, Alberta Health and Wellness, 1986 - 2006

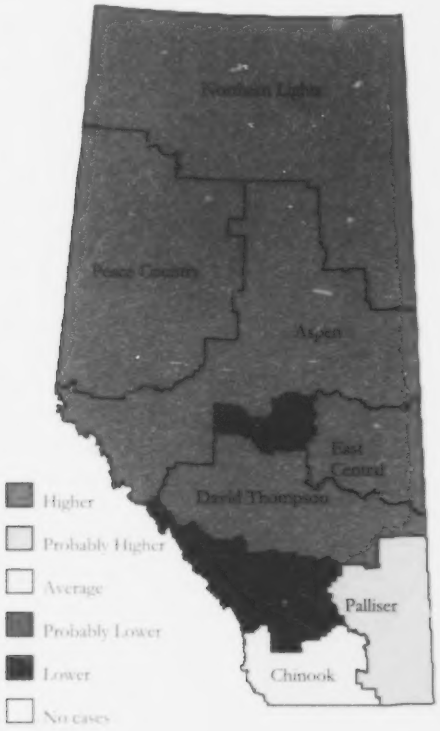
Pertussis can occur at any age, but severe illness is more common in young children who have not been immunized. It is spread primarily when infected people cough or sneeze. Complications may include pneumonia, middle ear infection, seizures, encephalopathy, apnea (brief cessation of breathing) and death. Eighty per cent of deaths attributed to pertussis occur in children under age one.

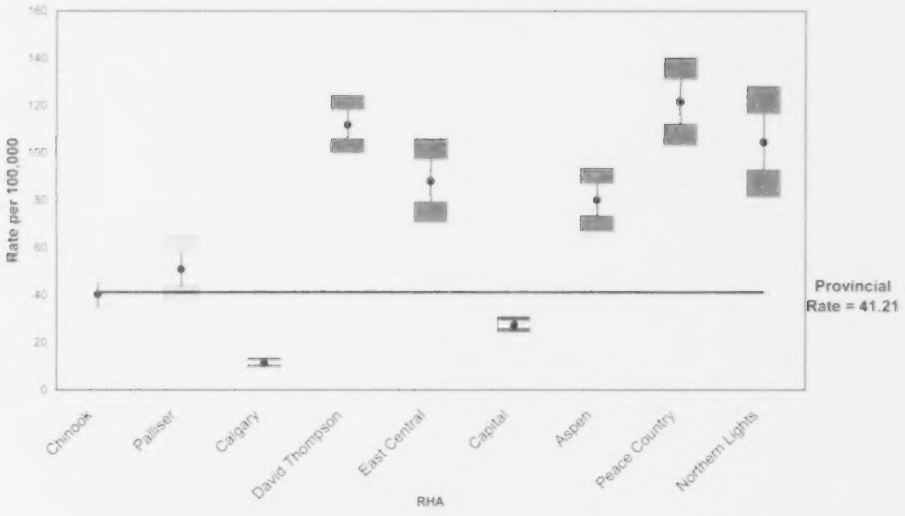
Figure 207: Age-Specific Incidence Rates for Pertussis in Alberta, 2004 - 06



Source: Notifiable Disease Database, Alberta Health and Wellness, 2004-06

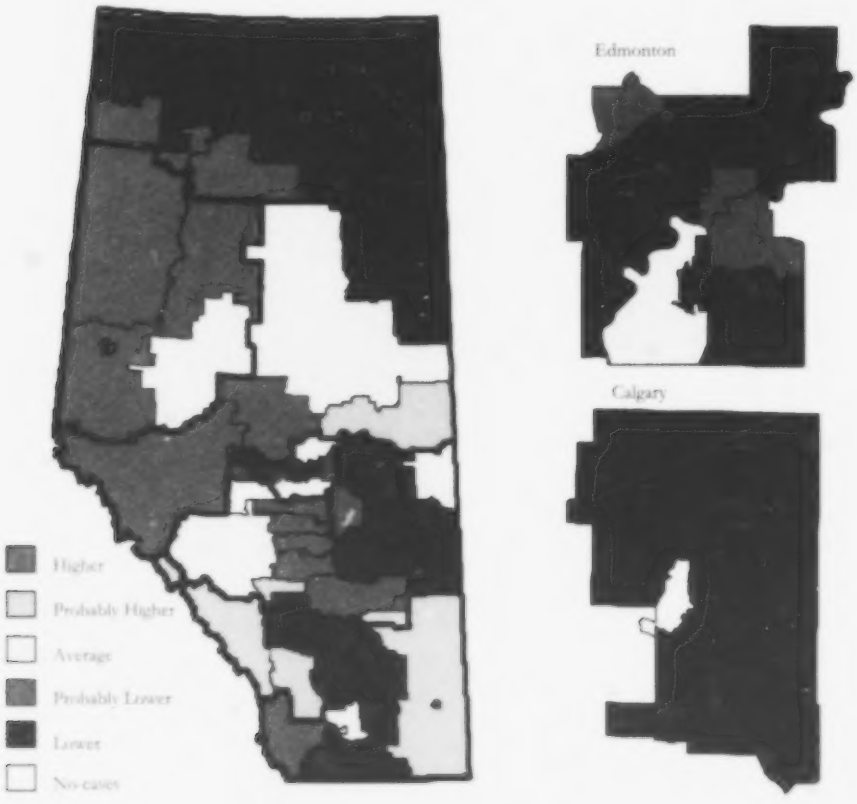
Figure 208: Regional Differences of Incidence for Pertussis, 2004 - 06





Source: Notifiable Disease Database, Alberta Health and Wellness, 1986 - 2006

Figure 209: Sub-regional Differences of Incidence for Pertussis, 2004 - 06



Source: Notifiable Disease Database, Alberta Health and Wellness, 1996 - 2006

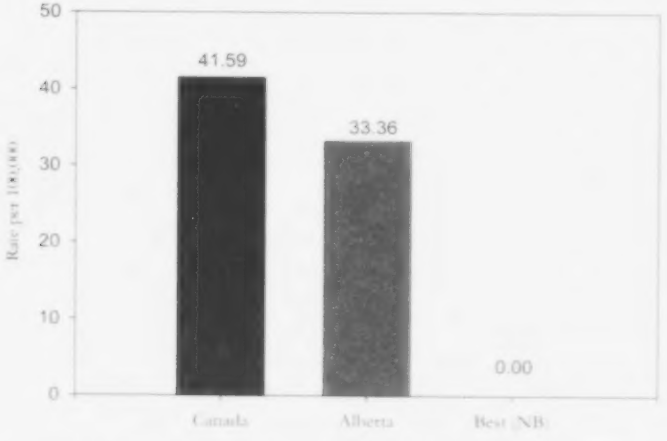
Influenza

Human influenza is caused by a group of viruses that circulate on a yearly basis, usually between the months of November and April. Symptoms of influenza are often headache, chills, body aches, cough, irritated throat and sinuses, fever, and in some instances nausea, vomiting, and diarrhea. Most people recover from influenza in about seven to 10 days, however for the very young and old, and people with comprised immune systems, it can be fatal.

Because the influenza virus is always changing, a new vaccine is created each year containing the 3 virus strains most likely to circulate. Getting immunized every year will greatly reduce the chance of getting influenza. Alberta Health & Wellness covers the cost of vaccine for groups at risk of serious complications of influenza, health care workers and volunteers. Some workplaces also cover the vaccine for their employees.

In 2004, the estimated rate per 100,000 population of laboratory confirmed cases of influenza in Alberta (33.36) was lower than the Canadian average of 41.59. New Brunswick was the only province that did not report any laboratory confirmed influenza cases in 2004.

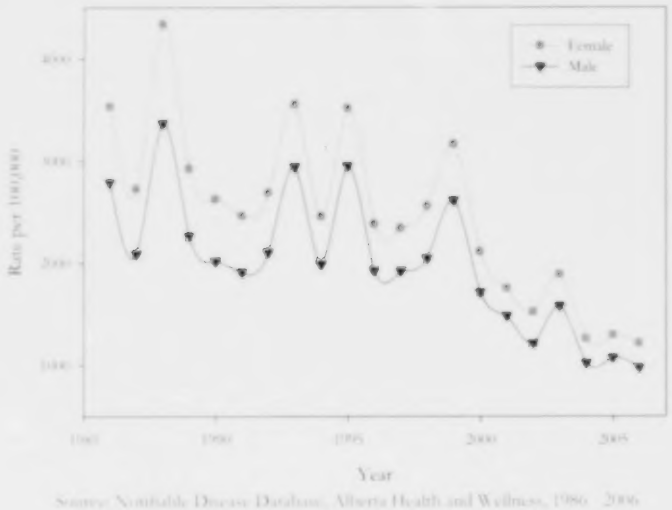
Figure 210: Incidence of Influenza, 2004 (Canada, Alberta, Best Province)



SOURCE: Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2005

Although the rate of influenza has fluctuated from year to year, it has followed a decreasing trend over the last two decades. It should be noted that lab confirmed cases reported here only represent a fraction of influenza cases as many people do not seek medical treatment, or are treated without confirmatory lab testing.

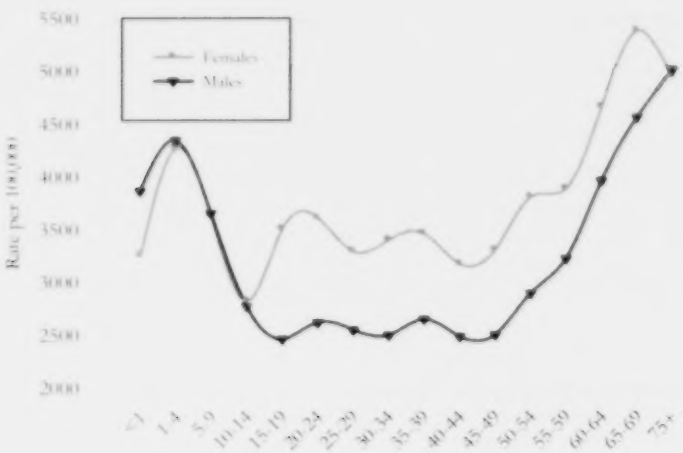
Figure 211: Incidence of Influenza in Alberta, 1986 - 2005



Source: Notifiable Disease Database, Alberta Health and Wellness, 1986 - 2006

Influenza occurs across the lifespan however young children and older adults are more likely to become ill from influenza. From 2004 to 2006 higher rates were observed in women than men in Alberta.

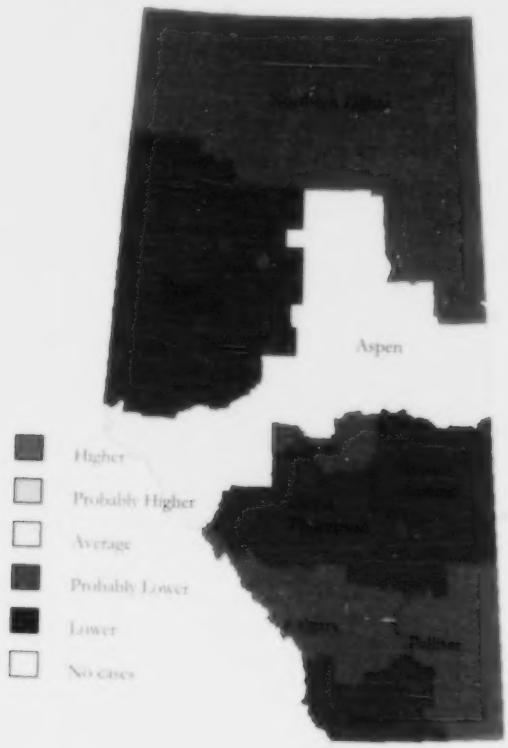
Figure 212: Age-Specific Incidence of Influenza in Alberta, 2004 - 06

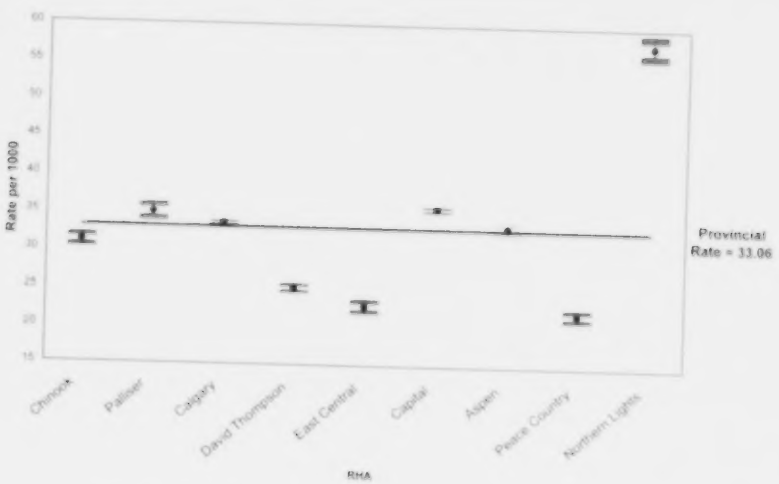


Source: Notifiable Disease Database, Alberta Health and Wellness, 2004-2006

From 2004 to 2006, the Northern Lights and Palliser health regions had an influenza incidence rate higher than the provincial average. The sub-regional map shows pockets of higher incidence around the province.

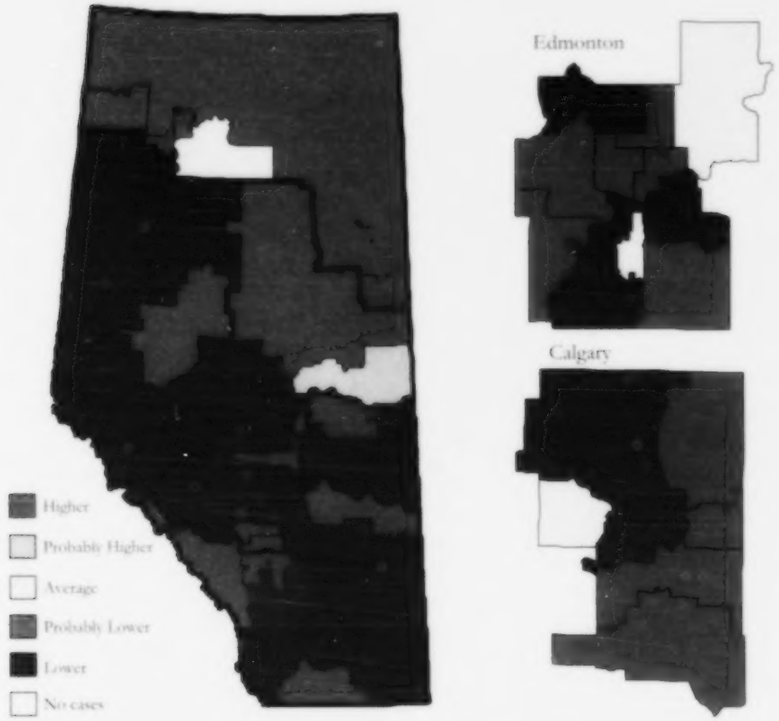
Figure 213: Regional Differences in Incidence of Influenza, 2004 – 06





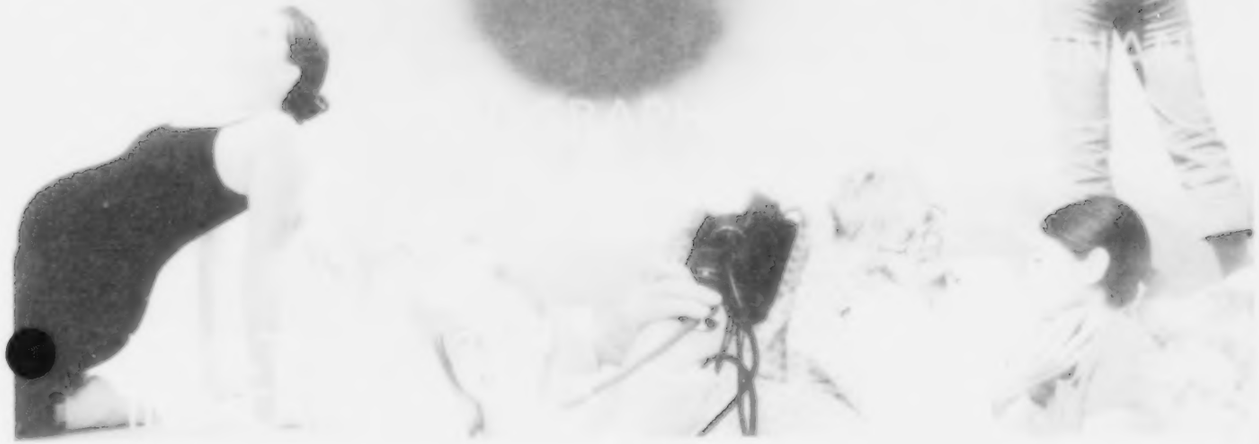
Source: Notifiable Disease Database, Alberta Health and Wellness, 1986 – 2006

Figure 214: Sub-Regional Differences in Incidence of Influenza, 2004 – 06



Source: Notifiable Disease Database, Alberta Health and Wellness, 1996 – 2006

F: Mental Health



Health Trends in Alberta:
A Working Document

Alberta

SECTION F: MENTAL HEALTH

Two main sources were utilized for the data in this section.

Data for self-rated mental health come from the Canadian Community Health Survey conducted by Statistics Canada.

Provincial age-and-sex specific and regional rates were obtained from the Alberta Health Care Insurance Plan Physician Claims (AHCIP) databases. Data analyses for this section were completed in collaboration with the Alberta Mental Health Board.

The specific database source is indicated for each graph.

Note: An analysis of trends based on AHCIP data going back to 1986 were not included in this section as Mental Health Service Delivery in Alberta has changed over the past 20 years. Trends in specific rates of mental health disorders would not be accurately reflected in such an analysis. Future versions of Health Trends may include a more in-depth analysis on time trends in mental health.

Mental health is a fundamental component of overall physical health, wellbeing and quality of life. One's mental health status can have a profound effect on the trajectory of their life. Poor mental health may negatively influence educational achievement, work productivity, the ability to form healthy relationships, and substance related abuses. Indeed, the consequences of poor mental health reach far beyond the suffering individual to bear a great cost to society.

To achieve mental health, two dimensions must be considered: the presence of mental wellbeing involving a personal, social and environmental context and the absence of mental disorders or psychiatric impairment.

An assessment of an individual's mental health would include measures of subjective wellbeing, individual capacities, personal characteristics, the ability to set and achieve goals, and the ability to establish and maintain meaningful relationships with others. Because such measures are generally not available, measures of the presence of psychiatric disorders are often used alone for surveillance purposes. This results in a bias towards reporting on mental illness in the population rather than the full spectrum of mental health.

Mental illness encompasses a large number of disorders, each of which can have a significant impact on the cognitive, affective or relational abilities of an individual. Individuals may experience a variety of symptoms ranging from mild forms of anxiety or depression to extremely debilitating episodes of bizarre thought and behaviour.

The presence of similar symptoms across a variety of mental illnesses, and the possible presence of a wide range of symptoms within a single individual, poses significant challenges for accurate diagnosis and treatment.

Approximately one in three Canadians will experience a mental health problem at some point in their life. However mental health has received less attention than other health issues. Further, people suffering from mental illness can be marginalized in their communities, and receive inadequate care and follow-up in the health care system. Many people suffering from mental illness fail to seek treatment or may be misdiagnosed with other health problems. These gaps in care reflect the complicated nature of symptoms, and a general lack of understanding and awareness of mental health in society at large.

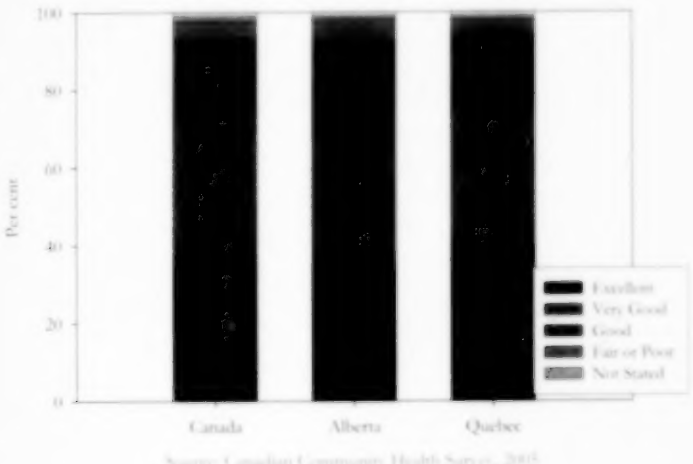
Despite these issues, great advancements in learning and treatment have been made in mental health. Many effective pharmaceutical and therapeutic treatment options are now available and mental health has been increasingly integrated into general health care. Challenges remain in eliminating the stigma associated with mental health problems, and increasing awareness and understanding so that more people get the proper treatment and support they need.

Self-rated Mental Health

A general assessment of mental health can be obtained through self-report from population-based surveys. This can provide an indication of the population suffering from some form of mental disorder, mental or emotional problems, or distress that may not be reflected in self-reported (physical) health. *See Section C: Health Status and Determinants for estimates of self-rated health status.*

In 2005, the Canadian Community Health Survey included a short assessment of individual's perceived mental health status. Individuals aged 12 and over rated their own mental health status as being excellent, very good, fair, or poor. Approximately 73.4% of Albertans reported that their mental health was either "very good" or "excellent". This percentage is slightly higher than the Canadian average of 72.9% and lower than Quebec (75.0 %), the province with the most people reporting very good or excellent mental health.

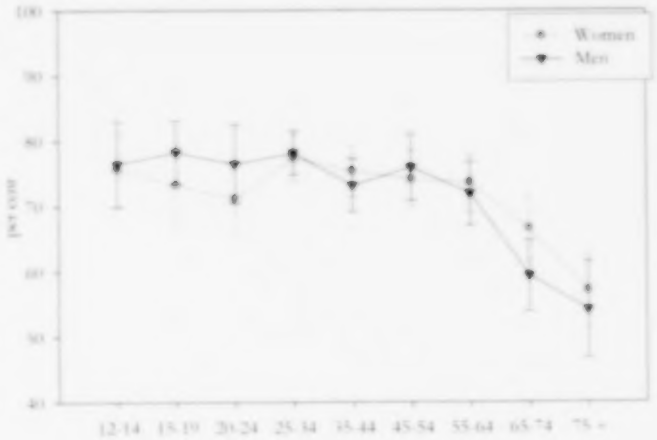
Figure 215: Self-rated Mental Health, Canada, Alberta, Best Province, 2005



Source: Canadian Community Health Survey, 2005

As people age, the percentage who report either "very good" or "excellent" mental health decreases. There was little difference between men and women for this indicator across the different age categories in 2005 in Alberta.

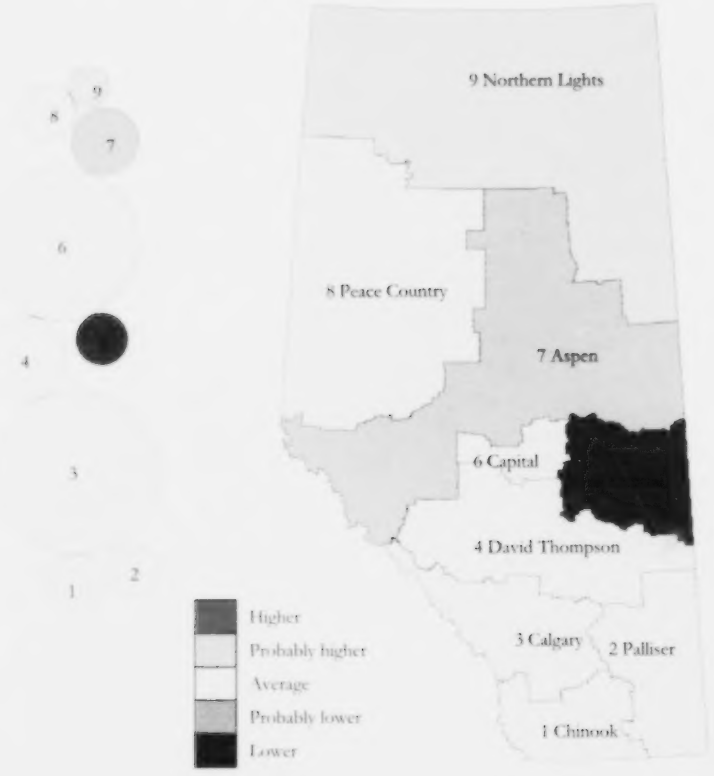
Figure 216: Self-rated Mental Health as "Very Good" or "Excellent" by Age Group and Sex in Alberta

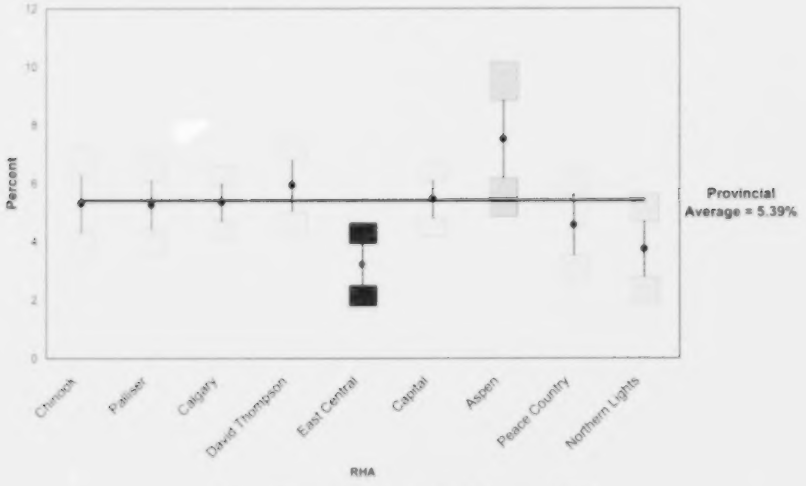


Source: Canadian Community Health Survey, 2000

The Alberta regional map shows the estimated percentage of people reporting their mental health as "fair" or "poor" by regional health authority. There was little difference between the regions on this indicator, however East Central health region had a rate significantly lower than the provincial average.

Figure 217: Regional Differences in "Fair" or "Poor" Self-rated Mental Health, 2005





Source: Canadian Community Health Survey, 2005

Alberta's Mental Health System

The mental health system in Alberta is unique within Canada, as there is a provincial board with a role related to oversight and coordination of services. The remainder of this section provides a brief overview of the mental health system in Alberta.

While Alberta Health and Wellness is accountable for policy, monitoring performance and funding the system, the responsibility for Albertan's mental health is shared by government ministries and service providers across the province.

The Alberta Mental Health Board (AMHB) engages in roles related to advisory, leadership/management, coordination and support in Alberta's mental health system. Regional Health Authorities deliver the majority of mental health services, operate mental health hospitals and clinics and deliver community based services in their regions.

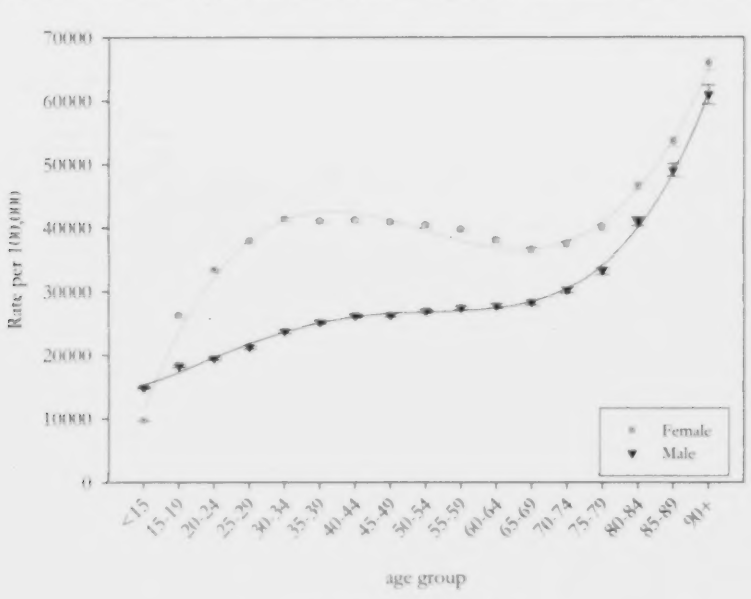
Physicians (general practitioners, family doctors and specialists such as psychiatrists) provide services to the largest percent of individuals with mental health problems. Various Provincial Ministries such as Children's Services provide services and support directly or through their regional authorities. Alberta Alcohol and Drug Abuse Commission provides planning and delivery of addiction services. The Mental Health Patient Advocate assists those clients who are under the Mental Health Act to understand their rights and investigates their complaints. Other providers such as private or non government agencies and community/ consumer groups provide mental health services as well as support programs. There are also important support providers that are not part of the formal system of mental health service provision.

Physician Consults for Mental Health Problems

Issues related to mental health command a significant share of overall health care expenditures. A recent Health Canada study entitled *The Economic Burden of Illness in Canada* reveals that mental illness ranked fifth highest among illness categories in expenditures for physician fees, third highest in expenditures for drugs, and second highest in facility costs.

According to the Statistics Canada Canadian Community Health Survey, in 2005, approximately 8.4 per cent of Albertans reported consulting a medical professional for a mental health problem. However, rates from these self-report surveys are much lower than physician claims data for mental health problems in Alberta. The average rate over 3-years based on physician claims for distinct individuals estimates that a little over 25 per cent of Albertans visited a physician for mental health related problems. Females, particularly in the adult years, are twice as likely as males to visit a physician for mental health; however differences between the sexes narrow in older adulthood.

Figure 218: Physician Claims: Age- and Sex-Specific Rates for Mental Health Problems, 2004-06

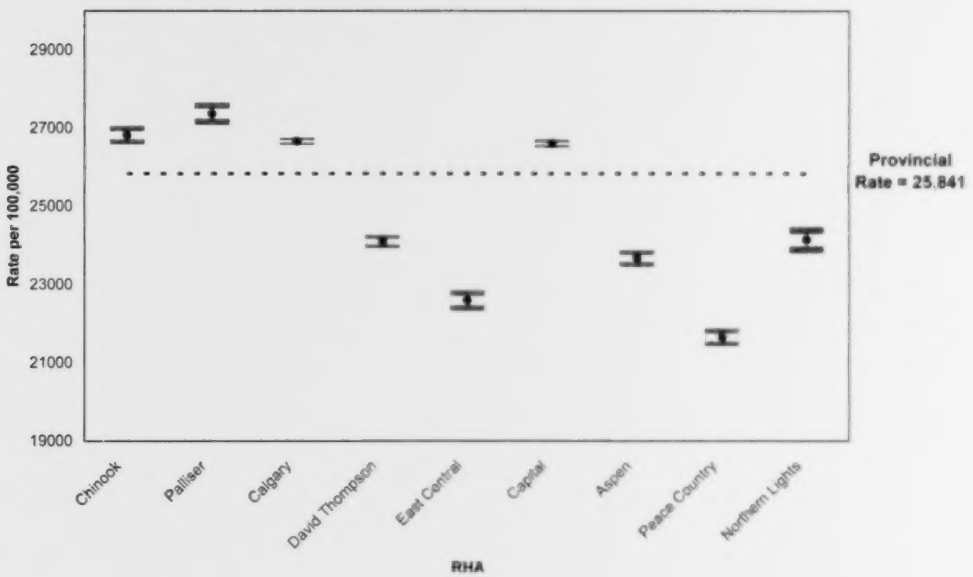


Source: AHCIP Physician Claims Files

The pattern revealed in the following map and graphs very likely reflect, in part, the type of services available in various areas of the province, and how these services are delivered, rather than purely reflecting differences in the prevalence of mental illness across different regions. Thus in urban areas, the greater availability of services provided by physicians and other funded agencies is reflected by higher rates for physician claims. In rural areas patients may be more likely to utilize mental health clinics and hospitals.

Figure 219: Physician Claims: Regional Differences for Mental Health Problems, 2004-06





Source: AHCIP Physician Claims Files





In-patient and Out-patient Services

The following graphs show the average rates over three years of in-patient and out-patient service utilization by regional health authority.

'In-patient' services include all acute care hospitals where individuals received mental health services, as well as the psychiatric facilities (i.e., facilities in Edmonton, Ponoka, Calgary Forensic, Claresholm and Raymond). By definition, inpatient refers to those individuals who stayed overnight in one of these hospitals.

Outpatients' in this analysis includes all outpatient centres located in hospitals as well as the community mental health clinics located throughout the province. These services are staffed by multidisciplinary teams that provide short or longer term treatment, depending on client need. Clients may make frequent visits to these clinics over time; however they do not stay overnight.

Figure 220: In-Patient Services: Regional Differences, 2002-04

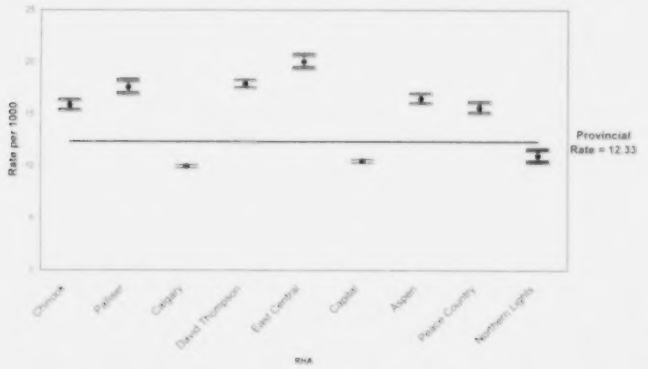
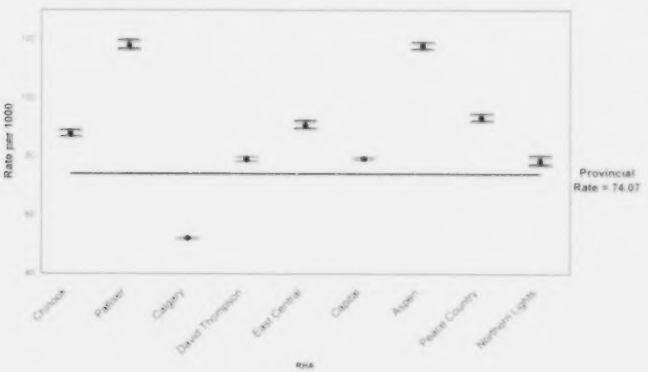


Figure 221: Out-Patient Services: Regional Differences, 2002-04



Source: AHCIP Physician Claims Files

Five most frequent diagnoses:

The top five diagnoses of individuals seeking physician services for mental health problems in Alberta from 2002 to 2004 are presented below. Anxiety related disorders comprise the largest percentage followed by mood disorders. Many mental health problems are related, and it is not uncommon for an individual to be diagnosed with multiple disorders making the total percentages shown below greater than 100 per cent.

Figure 222: Five Most Frequent Diagnoses for Mental Health Problems 2002-04 combined

Diagnosis Category	Per cent of Individuals
Anxiety Disorders	56.7%
Mood Disorders (including Depressive and Bipolar Disorders)	43.2%
Developmental Disorders	10.7%
Substance-Related Disorders	8.5%
Adjustment Disorders	8.1%

Note: An individual may have received more than one diagnosis within the fiscal year, therefore the sum of percentages may not equal 100 percent

Source: AHCIP Physician Claims Files

Anxiety Disorders are a group of chronic conditions characterized by abnormal feelings of anxiety and fear that are disruptive to everyday functioning.

Mood Disorders include depressive and bi-polar disorders. These disorders are characterized by periods or depression that may or may not be accompanied with periods of mania.

Developmental Disorders include a range of diagnostic categories such as: learning and communication related disorders, pervasive developmental disorders (such as Autism and Asperger's Disorder) as well as attention deficit disorders and conduct disorders. These disorders are more commonly diagnosed in children.

Substance-related Disorders are characterized as the inappropriate use of psychoactive substances that can lead to dependence, and can have serious harmful outcomes.

Adjustment Disorders are defined as significant emotional or behavioural symptoms that develop in response to a stressor. The stressor could be related to a variety of situations such as: financial, relationship, phase of life, being a victim of crime, experiencing a natural disaster.

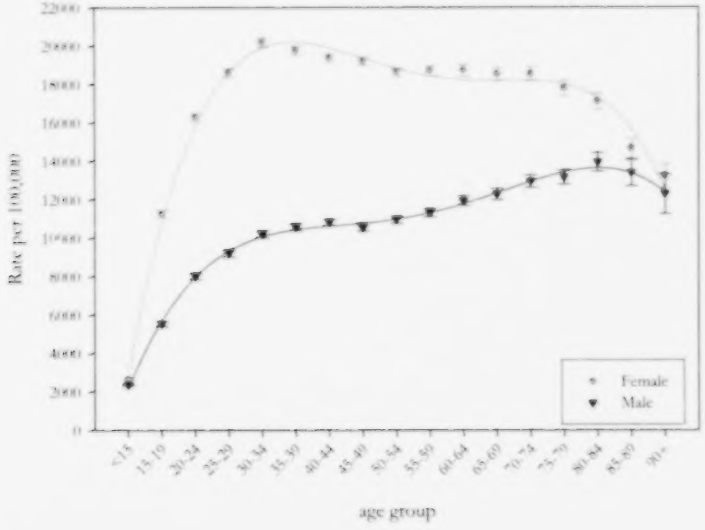
Anxiety Disorders

Anxiety disorders are a group of chronic conditions that affect thoughts, emotions, behaviour and physical health. A common thread to this group of disorders is abnormal feelings of anxiety and fear that are disruptive to everyday functioning. Common forms of anxiety disorder are Generalized Anxiety Disorder, Panic Disorder, Obsessive Compulsive Disorder, Social Phobia, and Post Traumatic Stress Disorder. Anxiety disorders can have a profound affect on an individual's ability to function and cope with everyday life. These disorders can also exacerbate other health problems. However, there are increasingly more effective pharmaceutical and therapeutic treatments available improving the prognosis for these disorders.

Anxiety disorders are common. The Statistics Canada Mental Health and Well-being Survey (CCHS 1.2) done in 2002 estimated that 1 in 8 Canadian adults were affected by an anxiety disorder in their lifetime *(Source: The Human Face of Mental Health and Mental Illness in Canada, 2006)*. These disorders also comprise the most common diagnosed mental health problem in Alberta.

Women are almost twice as likely to access physician services for an anxiety disorder as men, and rates climb quickly during the teenage years and remain high across the lifespan for both sexes. The highest rates are in women between 30 and 49 years of age where around 1 in 5 women sought physician services for an anxiety disorder in Alberta from 2004 to 2006.

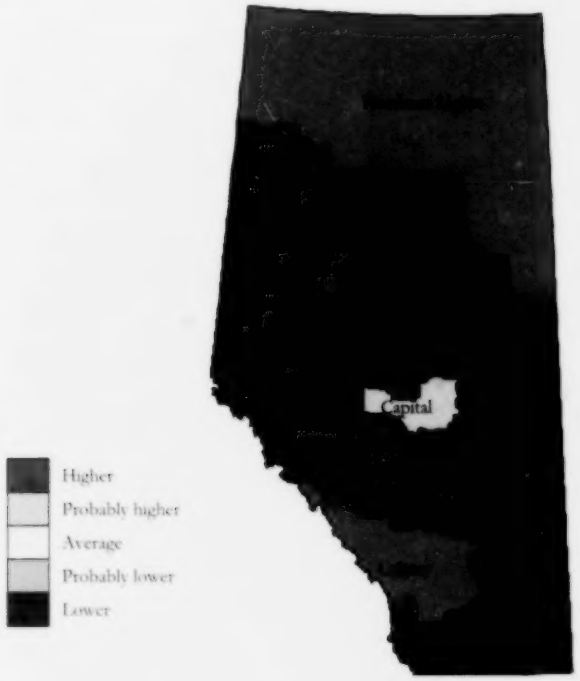
Figure 223: Age- and Sex-Specific Rates of Anxiety Disorders in Alberta, 2004- 06

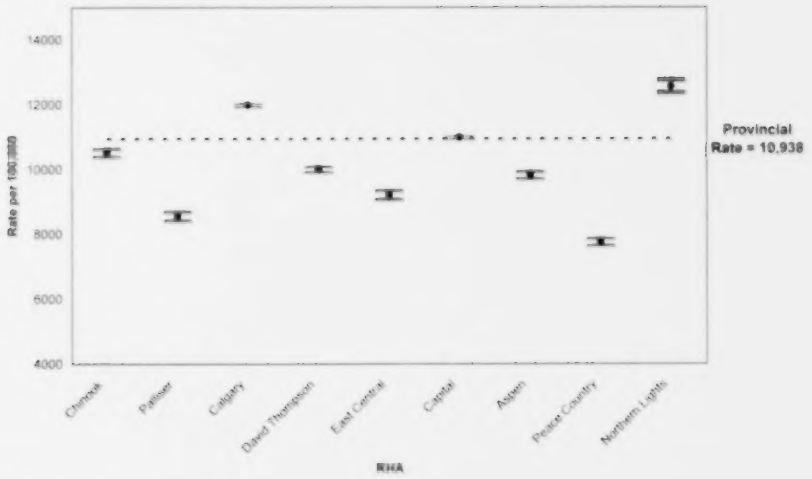


Source: AHCIP Physician Claims Files

The Calgary and Northern Lights health regions had a higher rate than the provincial average for physician claims for anxiety disorders. Capital health region may also have a higher rate, and the rest of the province had lower rates than the provincial average.

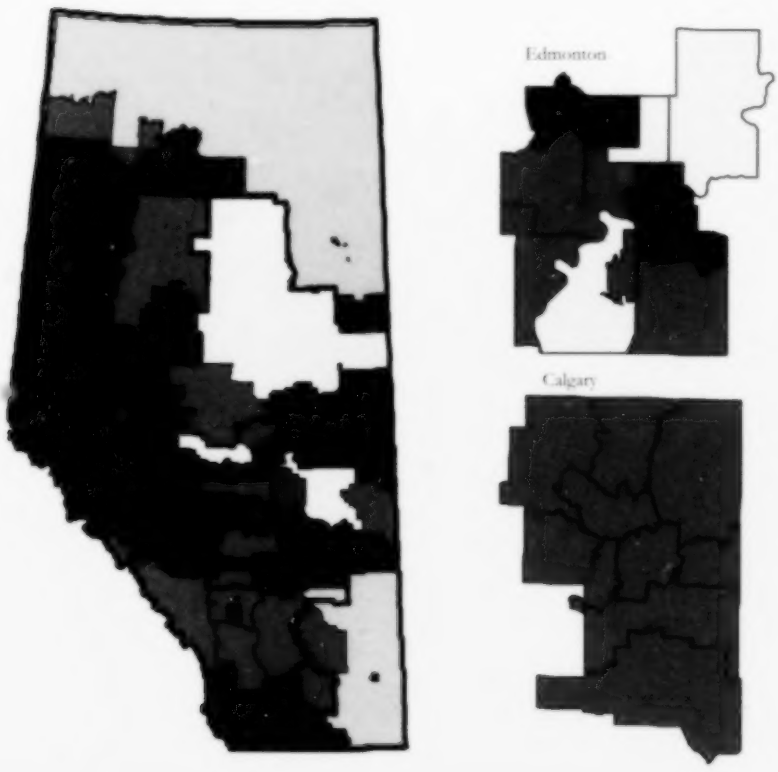
Figure 224: Regional Differences of Anxiety Disorders, 2004- 06





Source: AHCIP Physician Claims Files

Figure 225: Sub-regional Differences of Anxiety Disorders, 2004- 06



Source: AHCIP Physician Claims Files

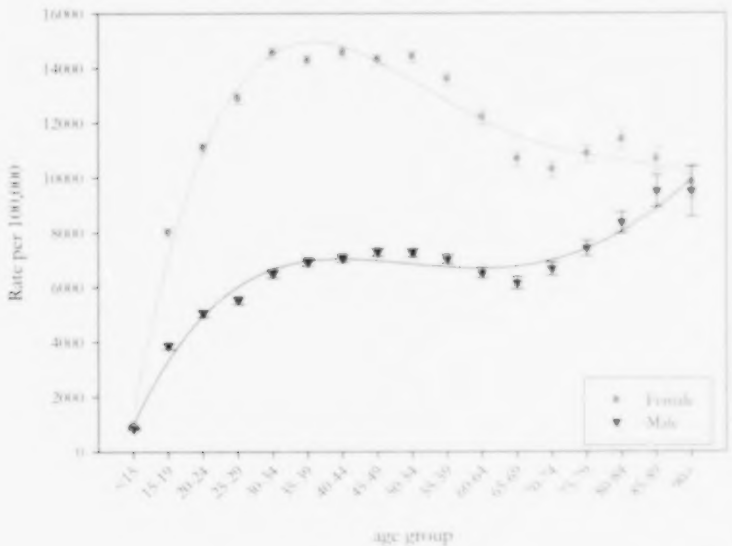
Depression

Depression is a mood disorder that is one of the most prevalent mental disorders worldwide. Depression is characterized by an episode in which an individual experiences sadness, depressed mood or a marked inability to experience pleasure or interest in virtually any activity. This is typically accompanied by a variety of other symptoms including: changes in appetite or weight, sleep disruption, variations in routine activities, a lack of energy, decreased feelings of self-worth, difficulties in concentration or decision making and recurring thoughts of death or suicide.

The Statistics Canada's 2002 Mental Health and Well-being Survey estimated that one in seven Canadian adults (13.4%) had symptoms that met criteria for a mood disorder at some point in their lifetime. In 2003, a screening questionnaire for depression was included in the Canadian Community Health Survey. Approximately 6.4 per cent of Albertans over age 12 scored sufficiently high enough on this scale to suggest that they were suffering from depression at the time of the survey.

Approximately one in 20 people in Alberta sought physician services for depression from 2004 to 2006. For women between the ages of 30 and 49 the rate is approximately 1 in 10. Women are more than twice as likely to suffer from depression as men. Across the lifespan, rates are highest during the reproductive years followed by a second peak after the seventh decade of life for both men and women.

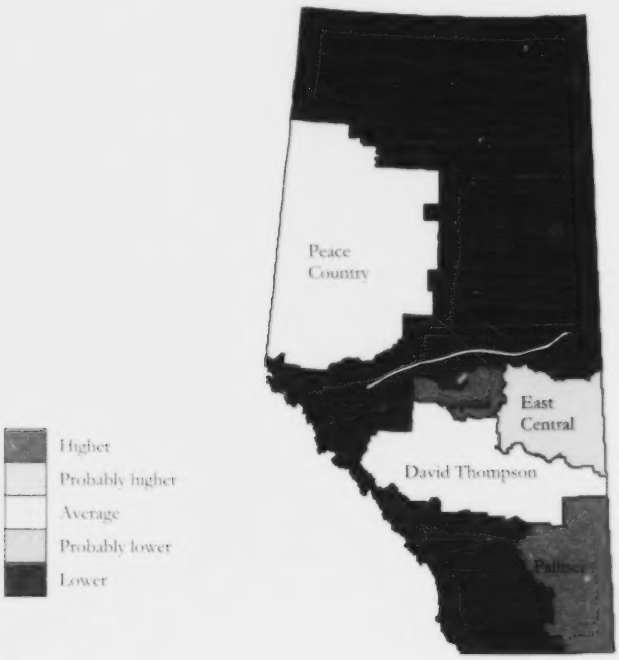
Figure 226: Age- and Sex-Specific Rates for Depression in Alberta, 2004-06

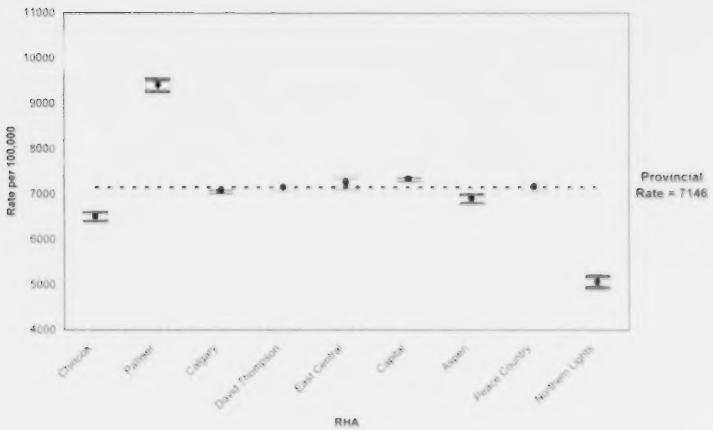


Source: AHCIP Physician Claims Files

From 2004 to 2006 the Capital and Palliser health regions had a physician claims rate higher than the provincial average for depression. Access to treatment and differences in diagnostic practices are potential factors influencing these different rates. However, fluctuations between regions for specific disorders are not unusual even when controlling for factors of access and diagnostic differences.

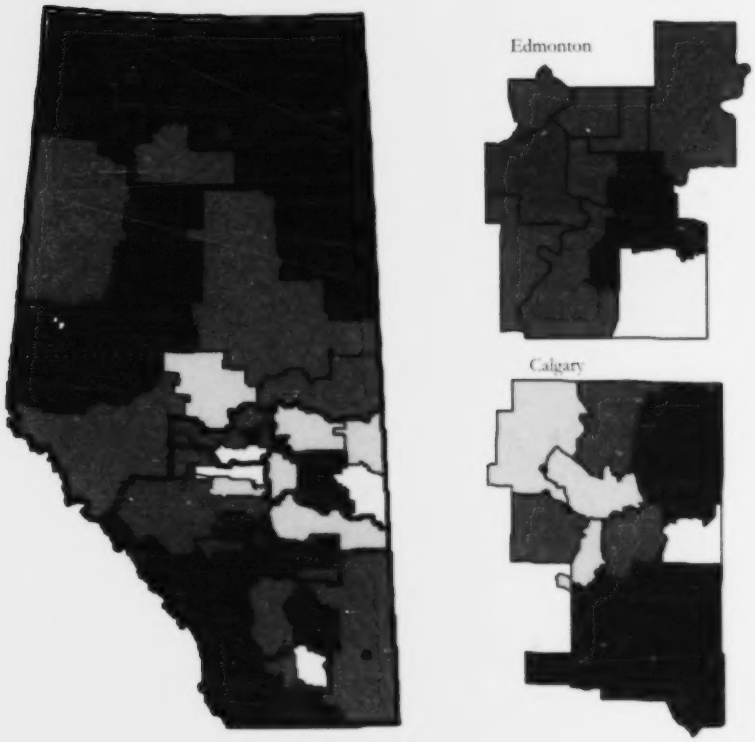
Figure 227: Regional Differences for Depression, 2004-06





Source: AHCIP Physician Claims Files

Figure 228: Sub-regional Differences for Depression, 2004-06



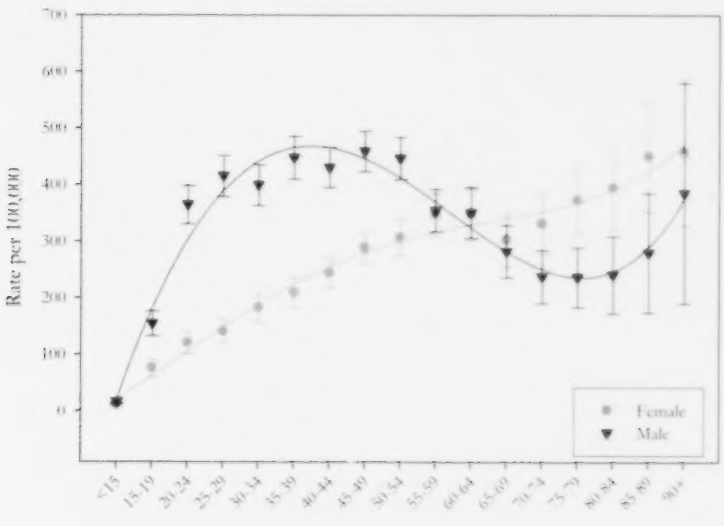
Source: AHCIP Physician Claims Files

Schizophrenia

Schizophrenia, although considerably less prevalent than anxiety and depression, can be an extremely debilitating mental illness. This illness affects individuals in many ways and presents with a variety of symptoms. Common features of the illness include hallucinations, delusions, and thought disorders. Hallucinations can cause people to see and hear things that may not actually be present. Delusions are false perceptions of oneself as well as other people or objects. Thought disorders include irrational thoughts or thinking patterns. Schizophrenia often results in a general withdrawal from typical social and occupational activities as well as decreased intellectual functioning, communication, and motivation. While individuals who suffer from this illness may experience periods of decreased symptoms, the disease can affect a person throughout an entire lifetime.

Men and women have a different age specific pattern for schizophrenia. Cases in men appear in early adulthood and peak around age 40 followed by a decline. For women, more cases appear at a later age and increase across the lifespan.

Figure 229: Age- and Sex-Specific Rates of Schizophrenia and Related Disorders in Alberta, 2004-06

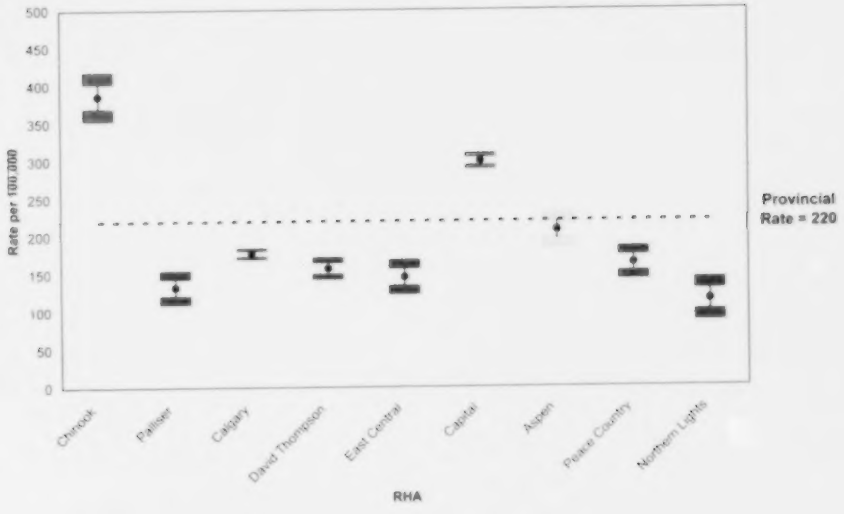


Source: AHCIP Physician Claims Files

From 2004 to 2006 the Chinook region in particular had a physician claims rate higher than the provincial average for Schizophrenia. Access to treatment and differences in diagnostic practices are potential factors influencing these different rates. However, fluctuations between regions for specific disorders are not unusual even when controlling for factors of access and diagnostic differences

Figure 230: Regional Differences for Schizophrenia and Related Disorders, 2004-06

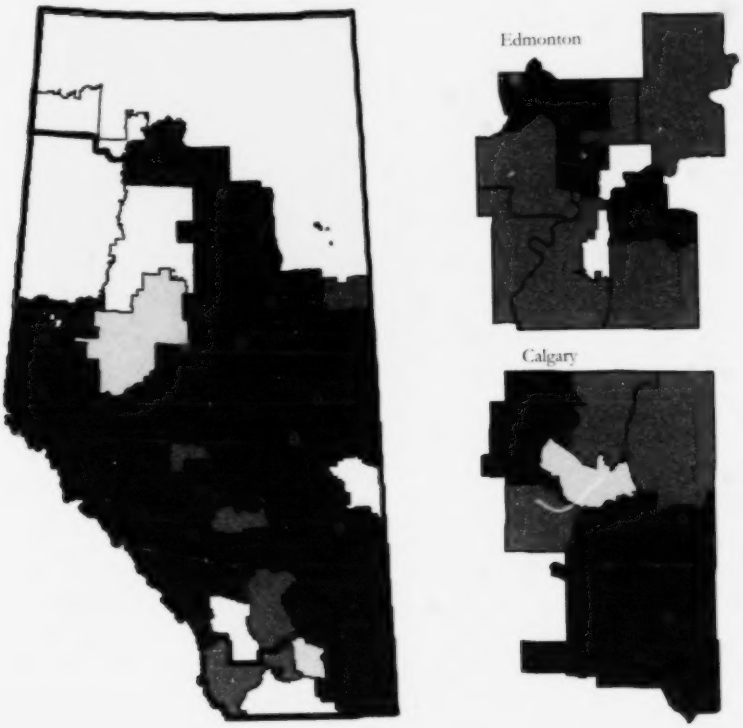




Source: AHCIP Physician Claims Files


Northern Lights
Peace Country
East Central
David Thompson
Calgary

Figure 231: Sub-regional Differences for Schizophrenia and Related Disorders, 2004-06



Source: AHCIP Physician Claims Files

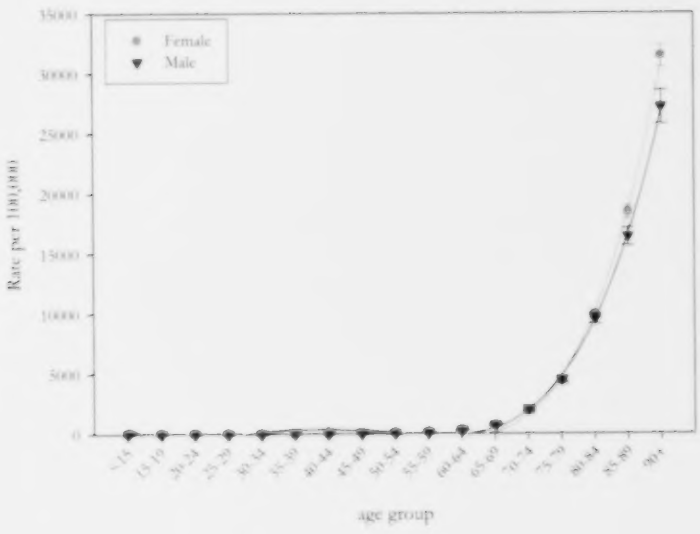
Dementia

Dementia encompasses a spectrum of disorders affecting several mental functions such as memory, cognition, and in some cases motor function of patients. The word dementia comes from the Latin word "demens" which means "without a mind". Dementia has been described through international consensus as one of the most burdensome conditions in terms of disability, surpassed only by spinal chord injury and terminal cancer (Ferri, Prince, Brayne et al, 2005). It is also common, with estimates of one third of women and one fifth of men being affected by dementia in their lifetime (Ott, Breteler et al, 1998).

Although some forms of dementia can occur in younger individuals, it is most common in later life with prevalence increasing dramatically after the seventh decade. With longer life expectancies and a growing older adult population, the prevalence of dementia is expected to increase exponentially in the next 40 years world wide. Alzheimer's disease is thought to account for the majority of dementia cases (50-75%), followed by Lewy-body dementia and cerebrovascular disease (each around 15-20%), with other diseases and injuries affecting the brain comprising the remainder. Many older dementia patients have combinations of pathologies complicating diagnoses.

In Alberta, the age specific rates for dementia follow the classic pattern with few cases until after the sixth decade and a dramatic increase after the seventh decade of life. By the eighth decade of life more than one in ten people are affected by dementia. No differences between men and women are evident.

Figure 232: Age- and Sex-Specific Rates of Dementia in Alberta, 2004-06

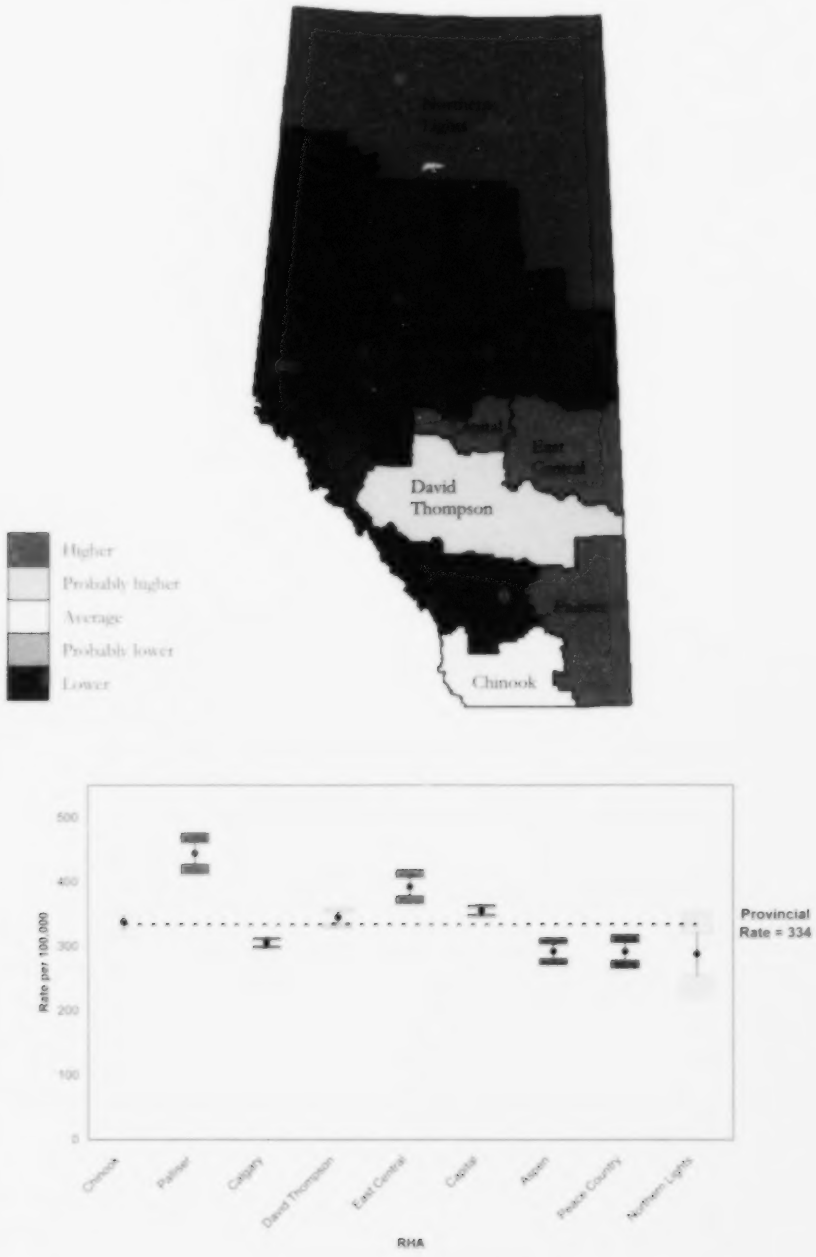


Source: AHCIP Physician Claims Files



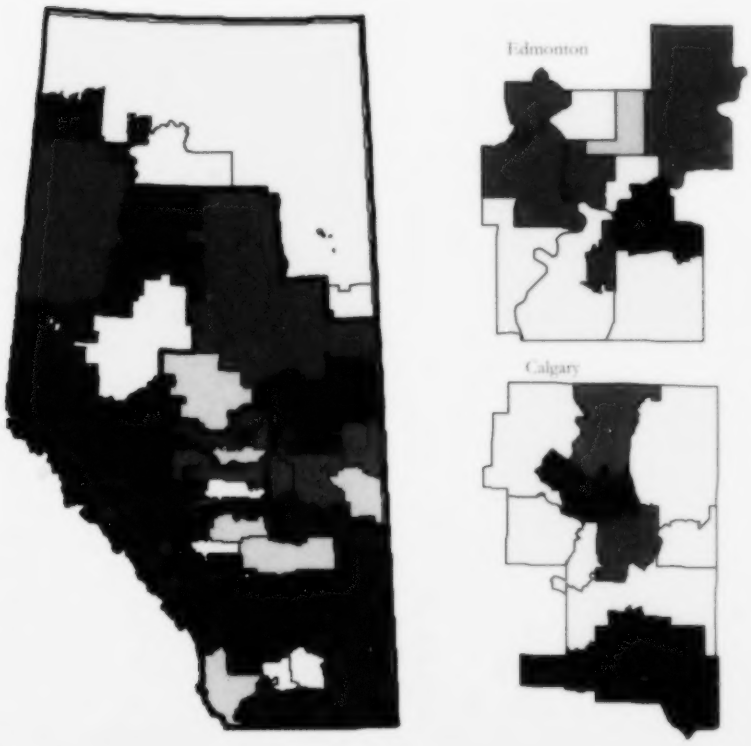
Capital, East Central, and Palliser regions had a rate of physician visits higher than the provincial average for dementia from 2004 to 2006.

Figure 233: Regional Differences for Dementia, 2004-06



Source: AHCIP Physician Claims Files

Figure 234: Sub-regional Differences for Dementia, 2004-06



Source: AHCIP Physician Claims Files

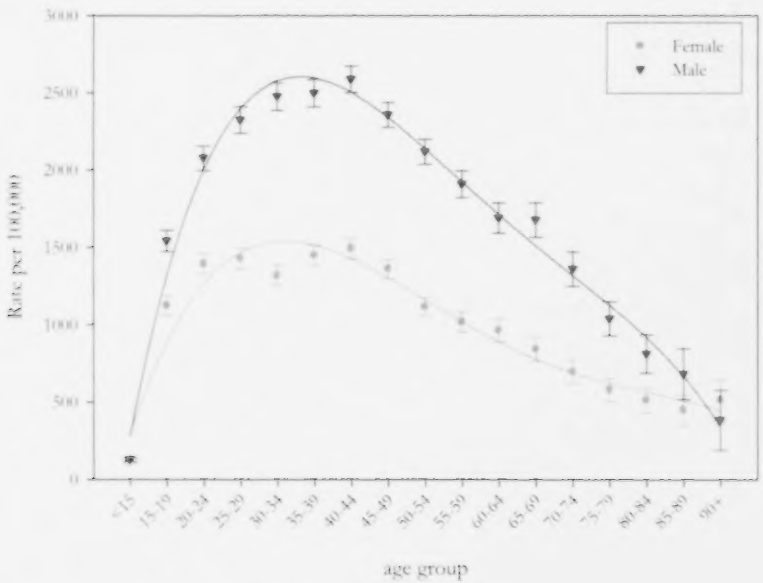
Substance-related Disorders

The use of a wide range of psychoactive substances can lead to substance related disorders. These substances can include alcohol, prescription and non-prescription drugs, illicit drugs, solvents, and inhalants. Tobacco is often excluded from analysis of substance-related disorders and is not included here. *See Section C of this report on Health Status and Health Determinants for rates of tobacco use.* Use of these substances can lead to dependence, and can have serious harmful outcomes.

There is a complex relationship between substance-related disorders and mental health problems. Problematic substance use can be both the cause and affect of mental health problems. Some individuals begin using substances to cope with troubling symptoms of a mental disorder, which then leads them to dependence and abuse of the substance. For others, their substance use precedes their mental health problems. Regardless of the direction of relationship, those with mental health problems have much higher rates of substance-related disorders than the general population *(Source: Statistics Canada: The Human Face of Mental Illness in Canada, 2006).*

Rates for substance-related disorders peak for both sexes between 25 and 49 years of age where approximately 1 in 50 males and 1 in 75 females had physician services for a substance-related disorder from 2004 to 2006 in Alberta. Rates are higher for males than for females across the lifespan.

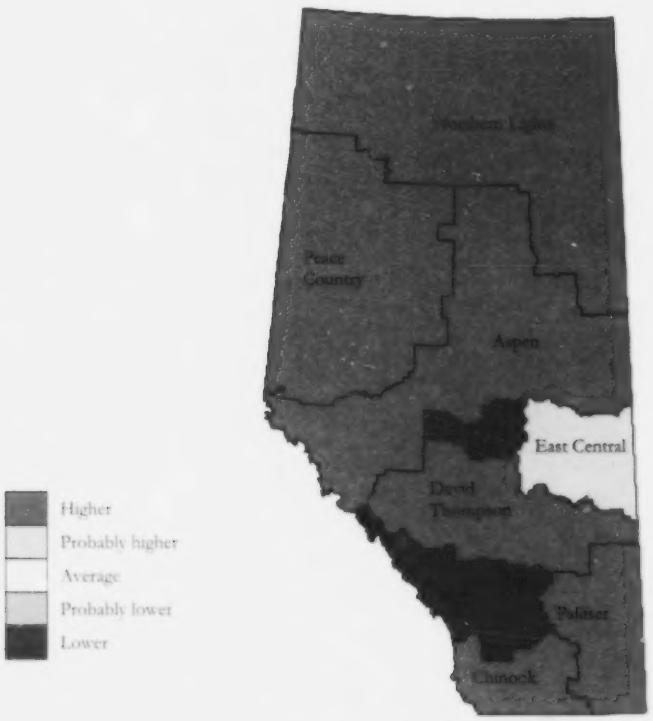
Figure 235: Age- and Sex-Specific Rates of Substance-related Disorders in Alberta, 2004-06

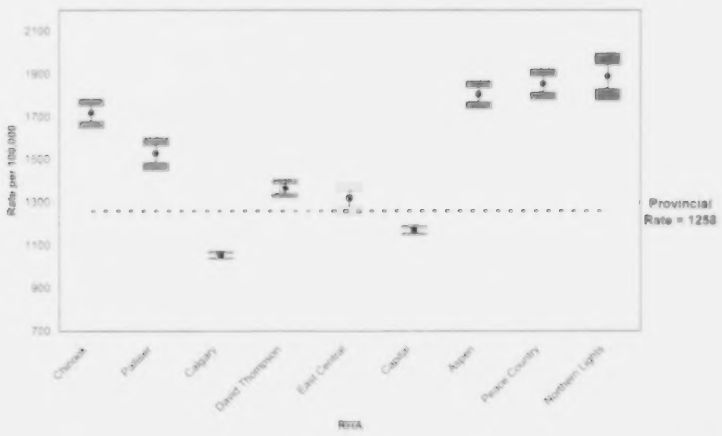


Source: AHCIP Physician Claims Files

The regional variation in the average rate of physician services accessed for substance-related disorders is likely due to the different services available in different regions including services provided by the Alberta Alcohol and Drug Abuse Commission that are not reflected in these data.

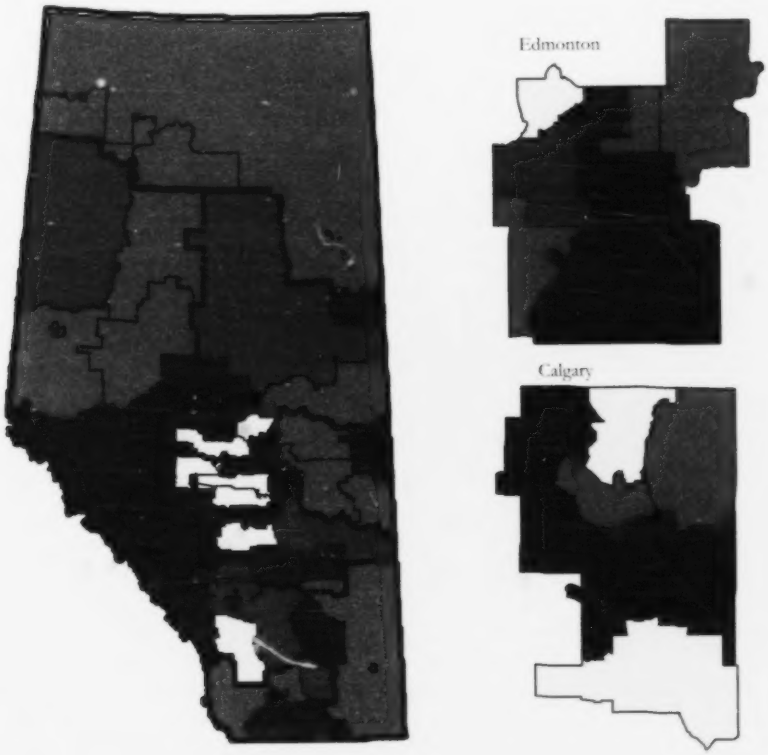
Figure 236: Regional Differences for Substance-related Disorders, 2004-06





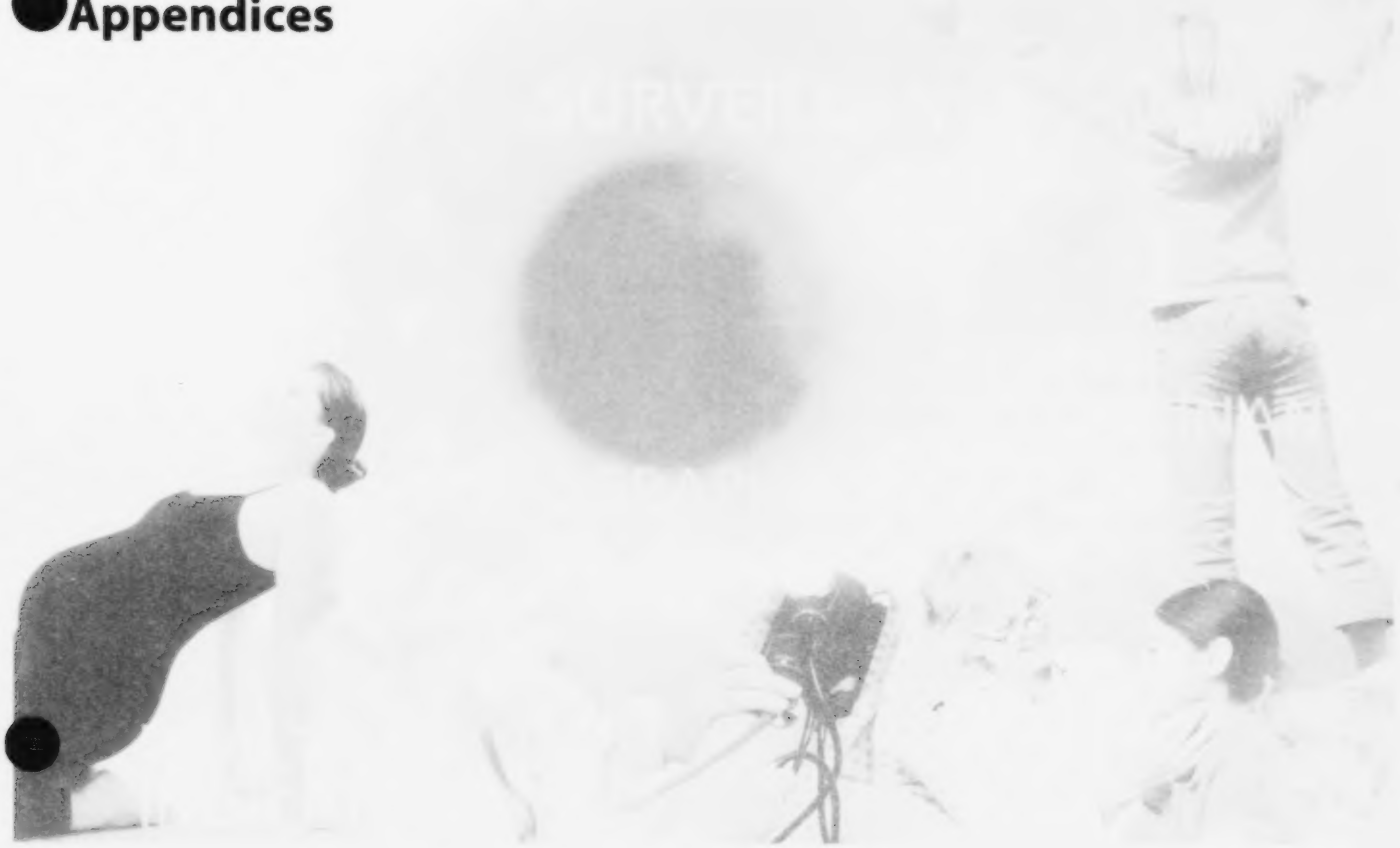
Source: AHCIP Physician Claims Files

Figure 237: Sub-regional Differences for Substance-related Disorders, 2004-06



Source: AHCIP Physician Claims Files

Appendices



Health Trends in Alberta:
A Working Document

Alberta

APPENDICES

Appendix A: References

Publications available from Alberta Health and Wellness

These documents may be obtained by contacting Alberta Health and Wellness, Communications Branch, at 780-427-7164 or toll free within Alberta at the RITE number 310-0000.

Many of these documents and others may also be obtained from the Alberta Health and Wellness public website http://www.health.gov.ab.ca/

2007

Alberta Health and Wellness (2007). Alberta Immunization Strategy 2007-2017.

Alberta Health and Wellness (2007). *Assessment of the potential Lifetime Cancer Risks Associated with Exposure to Inorganic Arsenic among the Indigenous People Living in the Wood Buffalo Region of Alberta.*

Alberta Health and Wellness (2007). *Community Acquired Methicillin Resistant Staphylococcus Aureus in Alberta Exposure Investigation (EI)*

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2006

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Alberta Health and Wellness (2006). *Health Effects Associated with Short-term Exposure to Low Levels of Sulphur Dioxide (SO2) – A Technical Review*

Alberta Health and Wellness (2006). *Ministry of Health and Wellness Business Plan 2006-2009.*

Alberta Health and Wellness (2006). *Report on the Health of Albertans.*

Alberta Health and Wellness (2006). *TB Control Manual.*

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Alberta Health and Wellness. (2005). *Alberta Child Health Surveillance Report.*

Alberta Health and Wellness (2005). *A Rate Mapping Template for Alberta Regional Health Authorities.*

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Alberta Health and Wellness (2005). *Estimating the Infection Rate of West Nile Virus in Alberta.*

Alberta Health and Wellness (2005). *Sexually Transmitted Infections Statistical Report 2004.*

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Alberta Health and Wellness (2004). *Alberta Congenital Anomalies Surveillance Report #6.*

Alberta Health and Wellness (2003). *Alberta Blood-borne Pathogens Surveillance Report*

Alberta Health and Wellness (2000). *Health Trends in Alberta.*

Other Publications

Alberta Health and Wellness (2006). ICD-9 to ICD-10 Coding with Reference to Causes of Death Grouping in Alberta. Working Documentation (version 1.1). Health Surveillance System Series #2

Canadian Cancer Society/National Cancer Institute of Canada (2006). *Canadian Cancer Statistics* (available on the Internet at http://129.33.170.32/ccs/internet/standard/0,3182,3172_14279__langId-en,00.html)

Canadian Institute of Health Information (CIHI) (2006). *Health Indicators* (available on the Internet at www.cihi.ca)

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Canadian Institute of Health Information (CIHI) (2005). *The Health Indicators Project: The Next 5 Years. Report from the Second Consensus Conference on Population Health Indicators* (available on the Internet at www.cihi.ca)

Ferri, C.P., Prince, M, Brayne, C., et al. (2005). Global prevalence of dementia: a Delphi census study. *Lancet,366*, 2112-17.

Canadian Institute of Health Information (CIHI) (2003). *The Women's Health Surveillance Report* (available on the Internet at www.cihi.ca)

Council of Managers – Environmental Health (2001). The Blue Book: A common reference system and operational standards for Alberta Regional Health Authority environmental health programs.

Federal, Provincial and Territorial Advisory Committee on Population Health. (1999) *Statistical Report on the Health of Canadians* (available on the Internet at *http://www.statcan.ca/bsolc/english/bsolc?catno=82-570-X&CHROPG=1*)

Federal, Provincial and Territorial Advisory Committee on Population Health. (1999) *Towards a Healthy Future: Second Report on the Health of Canadians* (available on the Internet at http://www.phac-aspc.gc.ca/ph-sp/phdd/report/subin.html)

Health Canada. (1998). *The Economic Burden of Illness in Canada* (available on the Internet at http://www.phac-aspc.gc.ca/publicat/ebic-femc98/index.html)

Practice Management Corporation (1996). *International Classification of Diseases 9th Revision Clinical Modification, ed. 5.*

Last, J., (1995) *Dictionary of Epidemiology*, 3rd edition, Oxford University Press, New York.

Data Sources

In the main, data analyzed for Health Trends was obtained from Alberta Health and Wellness administrative databases, and Alberta Vital Statistics. Additional data sources included:

National Council of Welfare. *Poverty Profile 2002-03* (available on the Internet at http://www.ncwcnbes.net/en/research/poverty-pauvrete.html)

Public Health Agency of Canada: Notifiable Diseases Online (available on the internet at http://dsol-smed.phac-aspc.gc.ca/dsol-smed/ndis/index_e.html)

Public Health Agency of Canada: Disease Surveillance Online (available on the internet at http://www.phac-aspc.gc.ca/dsol-smed/index.html)

Statistics Canada. *Health Indicators 2006* (Further information available on the Internet at http://www.statcan.ca/bsolc/english/bsolc?catno=82-221-X&CHROPG=1)

Statistics Canada. *Population Health Surveys* (Further information available on the internet at http://www.statcan.ca/english/concepts/hs/index.htm)

Statistics Canada. *Canadian Community Health Survey* (2000-01, 2002-03, 2004-05) (Further information available on the Internet at http://www.statcan.ca/bsolc/english/bsolc?catno=82-621-X)

Statistics Canada. *National Population Health Survey* (1994-95, 1996-97, 1998-99) (further information is available on the Internet at http://www.statcan.ca/english/IPS/Data/82F0068XIE.htm)

Websites

Further information relevant to health and health trends may be obtained from the Internet:

- the Alberta Health and Wellness website http://www.health.gov.ab.ca/
- the Health in Action website http://www.health-in-action.org/
- the Alberta Environment website http://www.gov.ab.ca/env/
- the Statistics Canada website http://www.statcan.ca/
- the Canadian Institute for Health Information website http://secure.cihi.ca/
- the Health Canada website http://www.hc-sc.gc.ca/
- the Public Health Agency of Canada website http://www.phac-aspc.gc.ca/
- the Alberta Government Water for Life website http://www.waterforlife.gov.ab.ca/
- the Clean Air Strategic Alliance (CASA) website http://www.casahome.org/)

Appendix B

ICD Cause of Death Coding

Cause of death, as described in ICD-10	ICD-9	ICD-10
Assault (Homicide)	E960-E969	X85-Y09, Y87.1
Asthma and status asthmaticus	493	J45, J46
Cerebrovascular diseases	430-434, 436-438	I60-I69
Chronic lower respiratory diseases (COPD)	490-494, 496	J40-J47
Diabetes mellitus	250	E10-E14
Liver disease and cirrhosis	571	K70, 73, 74
Ischemic heart diseases	410-414, 429.2	I20-I25
Malignant neoplasms	140-208	C00-C97
Malignant neoplasm of breast	174 (F),175 (M)	C50 (select fem.)
Malignant neoplasm of cervix uteri	180	C53
Malignant neoplasm of prostate	185	C61
Malignant neoplasm of trachea, bronchus and lung	162	C33-C34
Nephritis, nephritic syndrome and nephrosis	580-589	N00-N07, N17-N19, N25-N27
Non-intentional Injury - Falls	E880-E888	W00-W19
Non-intentional Injury- Transport Accidents	E800-E48	V01-V99
Intentional self-harm (Suicide)	E950-E959	X60-X84, Y87.0

Appendix C

ICD-9 Codes for Communicable Diseases

Health Condition	ICD-9	ICD-10
campylobacteriosis	ICD-9: 008.4	A04.5
chlamydia	ICD-9: 614-616	A55, A56
E. coli	ICD-9: 008.0	A04 – A04.4
giardiasis	ICD-9: 007	A07.1
gonorrhea	ICD-9: 099	A54
hepatitis B	ICD-9: 070.2	B16
hepatitis C	ICD-9: 070.4, 070.5	B17.1, B18.2
HIV and AIDS	ICD-9: 042-044	B20-B24
influenza	ICD-9: 487	J09-J18
measles	ICD-9: 055	B05
mumps	ICD-9: 072	B26
pertussis	ICD-9: 033	A37
rubella	ICD-9: 056	B06
salmonellosis	ICD-9: 003	A02
syphilis	ICD-9: 090-097, 099	A51, A52, A53
Tuberculosis	ICD-9: 010-018,137	A15-A19
West Nile virus	ICD-9: 066.4	A92.3